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ABSTRACT

Reports on 10 model programs in the education of handicapped children are directed at a definition of innovation in the educational realm, what people and what means are being used to achieve innovation in the education of handicapped children, and what ways additional people can be innovative. First described is Operation Challenge, a program of therapy for handicapped children with emphasis on the learning disabled child. A comprehensive physical education program for the severely physically handicapped is described, followed by descriptions of Project Focus, which works with children who have underdeveloped skills, Project Helping Hand, an innovative special education service center for a rural area, Project Told, whose primary purpose is to provide tutoring for students diagnosed as having a language disorder, Instructional Materials Center for teaching of special education for handicapped children, and innovative approaches to the education of children with learning problems via the engineered classroom. The concluding three papers discuss the meaning of innovation as reflected by the dynamics of dyslexia classes for the perceptually handicapped, those who profit from innovation, and changing behavior patterns and attitudes toward learning at the Little Brown Building. (CB)

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INNOVATION

IN SPECIAL EDUCATION:

TITLE III ESEA

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Elliot L. Richardson, Secretary

Office of Education

S. P. Marland, Jr., Commissioner

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PREFACE

In the summer of 1969 the Bureau of Education for the Handicapped decided to develop and design a conference on Innovation in Special Education in ESEA, Title III. The conference was held on September 4 and 5. The projects and the purposes of this conference were directed at a variety of levels. First of all, we wanted to know what it actually meant to be "innovative." Secondly, we wanted to know who, and in what ways, people working with handicapped children were reaching this difficult goal. Thirdly, we attempted to learn how more people could become successfully innovative. In other words, the bureaucracy took a personal concern in helping one to be professionally creative.

The conference presentations included in this report may create more questions than answers. Each model has its own message, makes its own magic! The 10 projects document a journey from a point of environmental isolation toward a point of creative communication. They have gone from the singular to the plural, from the status quo to the status "go." The paths these 10 model programs have created make it possible for us to think not only in similar developmental and catalytic terms but to reach cognitive and creative goals both hopefully and mutually.

The Commissioner of Education, Sidney P. Marland, Jr., has stated that one of his top five national objectives is "Innovation in American Education." This book is then actually a prologue, a prophetic statement of sorts. It is also an educational statement of the fact that we not only realize the dire need to be more innovative, but that we also recognize the inherent problems in addressing ourselves to analyzing, answering, and accepting the program needs that exist in this area.

We respect and reward those who have told us, each in his own distinctive way, that it should and that it could be done.

WARREN J. AARONSON
June 1971

CONTENTS

	Page
Preface	iii
The Keynote Address–ESEA Title III: A Happening *Maynard Reynolds*	1
Operation Challenge: A Program of Therapy for Handicapped Children *Gay Alford*	5
A Comprehensive Physical Education Program for the Severely Physically Handicapped *Roger T. Bunce*	13
Focus on Children with Underdeveloped Skills *Alan L. Dodd*	25
Project Helping Hand: Innovative Special Education Service Center for a Rural Area *Fraughton G. Ford*	31
Innovation: Project TOLD *Lee Nell Gann*	37
Instructional Materials Center for Teaching of Special Education for Handicapped Children *Richard P. Hentschel*	41
The Engineered Classroom: An Innovative Approach to the Education of Children with Learning Problems *Frank M. Hewett*	45
The Meaning of Innovation as Reflected by the Dynamics of Dyslexia Classes for the Perceptually Handicapped *Joyce S. Jones*	61
Who Profits from Innovation? *Lawrence W. Marrs*	69
Changing Behavior Patterns and Attitudes Toward Learning at the Little Brown Building *Sari V. Stroud*	77

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THE KEYNOTE ADDRESS ESEA TITLE III: A Happening

Congressional testimony indicates that about 80,000 to 85,000 persons are currently employed in the field of special education in the public and private schools of this country. If we were to extrapolate these figures from the testimony with the kinds of programs we have now and imagine that all handicapped children were being served, about three times that number would be required. Yet, in truth, we cannot recruit, train, and employ three times the present number of specialists in our field—based on the ongoing current models. Simple extrapolations from the kinds of programs we have been building in the past 2 decades will no longer suffice. Clearly there is a great need for new models with the goal of offering all handicapped children the kinds of educational services they urgently need.

A second consideration relating to the need for innovative efforts in our field is that education for the regular schools is changing very rapidly. For example, an elementary school in Duluth, Minn., recently had its old classroom walls removed, so that about 150 children are now assigned in one large space. With this new arrangement for the classroom, as many as five teachers and a like number of assistants can work around special interest centers. All the teachers are specialists, and they make a comprehensive team. Programs are prescribed individually for children on a contract plan. General classes for mentally retarded children have been dissolved into the general education program. While the cognitive development of some children is slower than others, the so-called emotionally disturbed and mentally retarded seem to be performing quite well under this program. Efforts of this kind are taking place in many schools and are spreading rapidly—especially in inner city schools. This will eventually change the context of special education with the schools. Special educators must be prepared to respond to these rapidly changing school situations and integrate themselves into the new ways in which their skills might be used.

A third major change in context for special education is the trend toward more inclusive and coordinated public services for handicapped children and their families. For example, the Governor of Minnesota recently announced that all State agencies would begin planning services according to a uniform regional structure. Eleven regions were established in the State, and these will be coterminous for all agencies. Cluster centers will develop in these new intermediate or regional structures, which will cut across the traditional lines of health, welfare, education, correction, and recreation agencies. We may expect from this program that small regional institutions will be created to serve the retarded and mentally ill and those in need of rehabilitation. Family counseling services and similar service units will emerge to provide "one-stop" service to aid families in each defined region. This trend toward coordinated comprehensive

services offers high promise for improvement and deserves the support of special educators. Hopefully this innovation will provide better service for handicapped children.

There is a fourth trend which is not so positive. One hears voices saying that special education, in effect, has become an excuse for the general failure of American education. The logic of those who expound this view is that children who present special needs are rejected by the regular schools, only to be placed in special programs where they are then labeled as defective in some form.

This is an unhappy charge against our profession, for many special educators feel they have led the way in advocating the case of the neglected child, and in their sensitivity to individual differences among children. Nevertheless, it is clear that the compliments for our efforts received a decade ago, whenever new programs for handicapped children were launched, are now no longer predictable. There is a more critical attitude in the air these days and a considerable feeling of disillusionment about some of the rapidly developed categorical programs for the handicapped. At the least, these challenging attitudes about special education should produce a heightened awareness of our programmatic shortcomings and our need for improved communication. The willingness to admit our own imperfections is also a part of the context of orbiting new innovations.

I have endeavored to point out the necessity for innovation in special education based on the clear inadequacies of simple extrapolation from present special education models; on the rapid changes taking place in regular education; on a trend toward comprehensive cross-agency coordination; and finally, on the fact that special education is being challenged to justify its present formulas, procedures and philosophy—particularly as it deals with the poor and the minority groups.

At this Conference on Innovation in Special Education, we shall hear discussed outstanding projects serving handicapped children which are supported under title III of Public Law 89–10, the Elementary and Secondary Education Act of 1965, as amended. Title III represents one of the most important concepts in the whole ESEA package. It is not too well known that the approximately $30 million which was expended on programs for the handicapped under title III ESEA made it the largest single program of direct services administered by the Bureau of Education for the Handicapped in 1968. Under this program funds were awarded to people and organizations with ideas for new and different approaches to educational programs to develop and test these ideas against the hard realities of present school and community life. This has been and still is a most difficult mission.

From the inception of the program in 1965, some States dedicated a significant portion of their Title III budget to programs for handicapped children. However, some States failed to make such allocations. As a result, nearly 3 years ago Congress "earmarked" 15 percent of the money in each State for projects relating to the handicapped.

June 20, 1969, marked the end of the first year under the "earmarked" provision. It was a year of difficulty for some States. Unfortunately, the general funding level for title III was not increased, and a 7.5 percent "earmarked" fund to support State administration from the title III program was also authorized. Thus, in some States it was necessary to provide 22.5 percent of title III monies to meet the new "earmark" provisions. But in spite of the problems, the proportion of funds spent on handicapped children exceeded approximately 30 percent. The negotiations involved in working programs through fiscal year 1969 were often difficult, but the congressional mandate has been accomplished.

The "earmarking" of funds for the handicapped has occurred more recently at a 10 percent level in vocational education; and a voluntary set-aside of Education Professions Development Act funds for the handicapped has been announced. Together with the title III "earmarked" funds these several "set-asides" represent a substantial sum of money and create a new approach toward stimulating programs for handicapped children. Funds for the handicapped are assured, but they are provided as part of a more general package of educational support. One result of this mixed approach is that special education is necessarily involved with a variety of agencies at all levels—Federal, State, and local—in order to develop its programs.

There are people in special education who would prefer that all funds for education of the handicapped be gathered up in one lump and be administered under one tent. For example, all programs might be placed in the Bureau of Education for the Handicapped at the Federal level and be channeled through Departments of Special Education at the State level. It would be better, some say, if special educators always negotiated from a position of having the funds available in their own budgets rather than in another budget.

I strongly favor the course we are presently pursuing. True, it is difficult to carry on all of the negotiations necessary to achieve special education pro-

grams within the context of the general vocational education program, the general Education Professions Development Act program and the general title III program. Yet, if we cannot achieve the coordination required between the U.S. Office of Education and the State departments of education, it will be difficult to achieve a coordinated place for handicapped children at the local level. However, I am confident that special education departments are strong enough to negotiate effectively. There have been attacks on the title III "earmarked" funds from many quarters, but I think it should stay; and we should negotiate our problems with those who are opposed.

While this is a period of great difficulty in special education, I think it is also a promising time. The leavening factor is that our field offers opportunities for energetic people with ideas and the conviction and courage to carry them out. New and better ways of serving handicapped children are emerging. Our disagreements about "earmarked" funds or other bureaucratic "nuts and bolts" are not nearly as important as the effectiveness of special educators in the field.

I have sometimes thought how easy it would be to squelch the creativity or innovativeness of children. One would simply devalue innovation, punish it, require everything to be done in a set, regimented pattern. It is difficult and expensive to be creative, but very simple to deny and to destroy what creativity might be present and what it might represent.

Dr. Warren J. Aaronson, Chief of title III, has enthusiastically brought together and developed this creative conference. This conference is more than a reflection of splendid projects; it is the spirit of and aspirations of title III itself. We will not only hear about 10 outstanding innovative title III projects, but also meet the people who designed and managed them. These are people who do more than talk about innovation; they have *done* it and now they will tell you about what they have done, so that their methods can be used as models for further adaptation and projection toward new horizons in special education.

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OPERATION CHALLENGE: A Program of Therapy for Handicapped Children

New Mexico, the fifth largest State in the United States, is sparsely populated with limited taxable wealth and a disproportionately low-income population. As a result, there have been few innovative projects such as the Special Services Project in Clovis. The project is unique and innovative within the State and in the Southwest.

A Child Centered Project

The project which provides a Special Services Center for Clovis Public Schools completed 2 years of operation in 1969. The entire operation of the project has been "child centered" with emphasis on the child who has a learning disability imposed on him by a special handicap. Through research and diagnostic screening, the Special Services Center has identified hundreds of children in the public and nonpublic schools of the area in determining the type and degree of learning disability. For many of these children a comprehensive program of special therapy and structured classroom environment has been provided as a followup to diagnostic screening. However, as was true in the first year, it has not been possible to meet the needs of all the children in Clovis.

The therapeutic program at the center has been structured to give intensive therapy to problems as diagnosed. The program includes the services of two speech pathologists, three classrooms for the emotionally disturbed, a class for children with visual-motor perceptual difficulties, consultant services, and a program of guidance and counseling to diagnose and place the child in a program structured to meet his needs. In 1969 a new program for preschool deaf and hard-of-hearing children was organized.

The diagnostic efforts of the center were successful in the second year of operation through the combined efforts of clinical consultants and the center counselor. Their expertise includes the area of learning disabilities, language disorders, speech and hearing disorders—with major emphasis in stuttering therapy and psychological testing with followup counseling. Children are often referred to medical and psychiatric clinics. Close contact is maintained with parents throughout the period of diagnosis and therapy. Parents are consulted before a program of adjustment is planned and interaction with them continues throughout the program.

Evaluation of the programs includes subjective and objective measures. In using subjective evaluation, a team approach is utilized involving professional consultants depending on their particular area of expertise along with teachers, principals, parents, or anyone who works with the child. The students are evaluated and objectives are realized through the

use of evaluative therapeutic instruments, many of which were developed at the center (teacher attitude scale, teacher rating scale, preacademic inventory, and student attitude scale).

The spectrum of disabilities treated at the center ranges from mild aphasia to very serious neurological and psychological handicaps. The consultants have proved very valuable to this program. Through the combined efforts of clinical consultants and center specialists, a high proportion of successfully adjusted children has resulted. These cases include the neurologically handicapped (in which case the children are given medical attention), speech pathology referrals, and children suffering from mildly neurotic to severe psychological problems. The cases of children having reading disabilities include those with severe aphasia and perceptual problems. Other children are completely ineffective in the classroom due to their emotional maladjustments.

Graduate students from colleges in the area use the programs and the facilities of the Special Services Center to work with specialists for practicums. The objective of the program is to give the students expertise in these specialized areas. The results have been encouraging. The students gain valuable experience in working with the handicapped student which they can later apply to their first year of teaching. Those students who have worked in the program have demonstrated superior first year teaching capability in comparison to the student who had not benefited from the specialized practicum at the center. Followup questionnaires to employers have provided data to substantiate this fact.

Permanent facilities were completed for the second year of the project. Centralizing all the services at the Special Services Center has provided a much improved and efficient operation. The center has become an integral and important phase of the educational process for handicapped children in Clovis. Its impact will continue to be more important in successive years.

Also, dissemination efforts were greatly increased in the project's second year. A large amount of instructional materials and automated teaching tapes have been developed in the project.

Through the use of tutors as relief teachers, many public school teachers have visited the facilities of the center to observe classes and techniques employed with these handicapped children. This has provided the center with a good working relationship among classroom teachers and administrators. This type of inservice training gives visiting teachers insight into the objectives of the center and the innovative instructional techniques used to reach them. As a result, referrals have increased markedly, to the degree that the present services of the center are not adequate to handle the needs of the handicapped children. Community acceptance of the Special Services Center has been so successful that parents of preschool children have greatly increased the demands for the specialized services. Programs for preschool children have been added as a result of the demand.

Almost 90 percent of the children who receive therapy at the center are from low-income ethnic groups. These include Spanish-American, Mexican-American, Negro, and American Indian children who could not receive these services if the title III Project for Handicapped Children did not exist.

Emotionally Disturbed

The project has three special classes of emotionally disturbed children—two primary and one intermediate with a maximum enrollment of eight per class. These children are referred from the 12 elementary schools in Clovis. Teachers screen all referrals to the project and assignments are made after extensive diagnostic screening with the assistance of professional consultants. Students accepted for enrollment in these classes must have a full scale IQ of 90 or above. Mental retardates are not accepted in this program. The objective of the program is to adjust the child within a maximum of 2 years. Very structured and direct approaches are maintained during the child's enrollment in the special class. The child competes against his own standards, thereby alleviating confusion and frustration due to peer competition. It is apparent that achievement cannot be separated from adjustment and academics are used as a vehicle for adjustment. Children in the program keep an unbroken routine with no idle time and no days without purpose. The child experiences academic and social successes which result in immediate progress as observed in all aspects of behavior. The children are on an abbreviated schedule from 9 a.m. to 2 p.m. It is felt that with the hyperactivity and tension which are common to these children such a schedule is vital to successful adjustment.

When children are accepted into the program, tests are administered to determine the academic level and the psychological maturity of the child. The child then uses a completely different series of books than those used in the public school system. He is placed at his present ability level. He may work at different grade levels in the various subjects. Each classroom has a full-time teacher-aide who has been chosen with care and has the ability to work with handicapped

children. Each child is seated in an individual cubicle to lower distractions. In some cases, children are referred to medical doctors for further evaluation and treatment.

Instruction is completely individualized and is begun at levels low enough to prevent frustration. Children are not confined to a specific grade level academically and may go above or below their age level.

Sincere personal interest on the part of the teacher and instruction techniques that favor the social and personal adjustment of each child foster the development of proper attitudes, habits, and practices.

A close working relationship is maintained at all times with the parents.

When the child has been satisfactorily adjusted, arrangements are made to have the child placed with a different teacher and in a different school than that from which he came. This eliminates any stigma attached to the child by his peers or former teachers. Teachers are chosen with care to fit the individual needs of the child. The teacher maintains a close liaison with the parents and the newly assigned teacher. Contact is maintained with the child as he moves from one grade to another and reevaluation made in some cases. In some instances the emotionally disturbed child is found to have perceptual-motor difficulties and is then referred to the perceptual-motor specialist for an extended period of therapy.

The primary objective is to change the behavior of the child so that he can adjust to the classroom activities and the demands of society. The composition of the class changes throughout the year as the child realizes satisfactory adjustment, makes the desirable behavioral changes, and is returned to the regular classroom.

Instruction with these children is carried out on a one-to-one basis. Students are clearly aware of what is expected and are rewarded for their efforts. In some cases they are given one assignment with a designated amount of time to finish. Another assignment is given upon completion of the first. The physical structure of classrooms for the emotionally disturbed makes constant supervision of each individual possible, thus lessening tendencies to daydream and/or be unproductive.

Every opportunity is provided for the child to enhance his capabilities of becoming self-sufficient and independent. Some children's self-concepts are so low they are unable to do even first grade work without the continuous help of the teacher or teacher-aide. In these cases the child begins academically with the simplest tasks structured to rebuild self-esteem. Self-esteem truly seems more significant in some cases than intelligence. Every effort is made to help students face reality.

Programed instructional materials are used with great success in helping the students. Automated teaching tapes are sent home with the child who reaches a specified maturity level. This is a technique of providing a reward for desired behavior.

Students are encouraged to ask questions when perplexed, no matter how much they fear they will seem stupid to others. This has been a major problem in public schools for most of the children and our goal is to desensitize them to the fear of oral expression.

A team approach is used in working with emotionally disturbed children. Team conferences are held frequently to discuss the progress of each student. A general meeting is held monthly for parents and teachers to discuss any problems.

The full-time presence of the teacher-aide in the classroom frees the teacher so he can give immediate attention to the child who is having behavior problems at the time the problem occurs. Teacher and student may then discuss problems and solutions to them. Discipline is not a major problem in these classes, although 90 percent of the students were referred because of problem behavior. Once the environment is structured and limits set, behavior problems seem to lessen or cease. When problems arise, students are helped to understand why they acted or reacted in a particular way. If the same behavior occurs again, rewards are withheld as a disciplinary measure.

Speech Therapy

The Special Services Center employs the services of two full-time speech pathologists who are responsible for a diagnostic and instructional program of remediation for referrals made to the project throughout the school district. The therapists are aided in the diagnostic and remediation techniques by clinical consultants who are brought in on a part-time basis (usually 1 day per week).

Handicapped speech problems at the center include articulation, deaf and/or hard-of-hearing, stuttering, voice, cerebral palsy, cleft palate, mentally retarded, aphasia, and delayed speech and language.

A survey is made annually of all second grade children in the 12 elementary schools to determine the percentage of disability and the various types of speech impediments. A complete file is maintained for each child treated. A close liaison is maintained between speech therapist, regular classroom teacher,

school nurse, speech consultants, and parents in the overall therapeutic process.

The number of clients for therapy is limited to insure an effective program. Speech clients from the elementary schools are bused to the center daily, Monday through Thursday, for 30-minute classes. It is felt the more sessions per week the more rapid the progress. This has proved most effective with approximately 45 percent release during the school year. On Fridays students from the three junior high schools and one high school attend speech classes. The students are stutterers, hard-of-hearing, or they have articulation problems. The various impediments are, of course, handled separately. A professional speech consultant trained specifically in stuttering therapy is used in the project for junior high and high school students. Results of this endeavor have exceeded expectations.

Another part of the speech therapist's Friday schedule is devoted to preschool students. During the summer months these students are scheduled for daily therapy sessions. Only severe problems are enrolled at the preschool level because of shortage of speech therapists. Also, maturity will eliminate many articulation difficulties.

Most of the students enrolled in speech are products of underprivileged environments where below standard speech and language prevail. Remediation is quickly evident because of the functional nature and absence of organicity. Most of the case load consists of articulation problems, as in any other speech program. Ninety percent of the speech students are handicapped in language, and language therapy is provided along with speech therapy. Many of the students are bilingual and therefore need language training as well as speech. This is a strong part of the speech therapy program.

All students enrolled in speech therapy are given complete hearing tests. Copies of these go to the assigned school nurse and followup by ear, nose, and throat specialists is made. Articulation referrals are given articulation tests and sounds are arranged in order of acquisition by the child and therapy is initiated. Four progress reports are made during the regular school year to parents and classroom teachers. Different reporting forms are used depending on the type of speech problem.

In initial articulation therapy intensive auditory training is given on the defective sound, auditory discrimination of the correct and defective sound, producing the sound in isolation, nonsense syllables, words, sentences, and then stabilization of the sound or sounds in conversational speech. A language approach is utilized simultaneously. Specialized speech and language sheets are used extensively on an ability level for each child. The speech lab is used daily in developing listening skills and self-hearing. Special facilities are provided for physically handicapped children, such as cerebral palsied students. Each individual has a daily plan of therapy suited to his particular needs.

Voice problems in the elementary school seem to be more and more in evidence. These children receive a thorough evaluation by a consulting speech pathologist and if he deems it necessary, they are sent to an otolaryngologist for further evaluation. A few severe problems have been identified in this manner.

The center cooperates with a nearby university speech clinic in the training of student therapists. Student therapists work with lesser problems while the center therapists devote more time to severe problems.

Speech therapy programs for the school year 1968–69 provided therapy in seven areas of speech disorders. One hundred and eighteen students received therapy at the center. The percentage of speech disorders was as follows:

Key	*Speech disorder*
75.5 percent	Articulation
5.9 percent	Rhythm
5.9 percent	Hearing impairment
0.9 percent	Cleft palate
1.7 percent	Voice
2.5 percent	Cerebral palsy
7.6 percent	Language

Perceptually Handicapped

The program for the perceptually handicapped is designed to identify and diagnose children with learning disabilities by type and severity of problem or problems. Authorities state that these problems are prevalent in 10 to 20 percent of the school population. However, there are only two such classes for these children in the State of New Mexico.

An orientation has been provided throughout the year to public school teachers in the Clovis School System to help them identify and refer students. A professional consultant works closely with the center teacher in structuring an individual program of remediation for each child.

The Frostig Visual Perception Program is used with all children in the program to further developmental, remedial, or maintenance skills for visual development. Left and right orientation is taught through body exercises, controlled reader films, finger plays, and phonics skill exercises. An attempt to improve ocular control is practiced in visual tracking

exercises and controlled reader films. Reading skills are taught in individualized programs according to a hierarchy of deficiencies. Listening skills are practiced by the use of taped skill builders.

The purpose of the program for the perceptually handicapped is not only to work with the children but also to orient teachers, administrators, and parents to sensory-motor training, ocular control, form perception, improving body image, and to help them realize that a program of "more of the same" will not necessarily help.

Deaf and Hard-of-Hearing

A recent innovation at the center is the deaf and hard-of-hearing class for preschool children, age 3 to 5. The children come from eastern New Mexico counties.

This class constitutes another innovative feature since it involves cooperation between the New Mexico School for the Deaf in Santa Fe and the Special Services Center of Clovis Public Schools. The School for the Deaf provides consultative and evaluative services to the class. Money for special acoustical equipment was provided by funds awarded under title VI–A of the Elementary and Secondary Education Act. In addition to the regular instruction specialist, an aide is provided in the classroom. The mothers of the children attend classes once a week to observe teaching techniques and learn how to work with their children at home. The classroom provides a practicum for students at Eastern New Mexico University to work with hard-of-hearing students. This university (19 miles from Clovis) has the only program in New Mexico for preparing teachers for the deaf.

An oral approach to teaching speech and language is the primary mode of instruction. However, finger spelling is being used as another avenue of communication since some of the children do not have enough residual hearing to learn effective oral communication.

The establishment of this class has made it possible for the deaf child to remain at home or close to home in eastern New Mexico rather than having to be sent several hundred miles to the only available school for the deaf in New Mexico. Some children have been transferred from the State school for the deaf to the Special Services Center.

Preliminary surveys indicate the need for an intermediate section for deaf and hard-of-hearing in eastern New Mexico. Plans for expanding further services for the hard-of-hearing at the center are being pursued.

Research

In meeting the objectives of our program for the handicapped, research projects were planned and executed, giving positive results from which to base objective comparisons, theories, and evaluations.

The following is a synopsis of the research projects carried out at the center since its initiation in January 1966.

A COMPARISON OF TWO METHODS OF TEACHING READING TO RETARDED READERS

Words in Color vs. *Up and Away* of the Houghton Mifflin Co.

This was a comparative study of two approaches to the teaching of reading.

Analysis of variance technique was employed to test the significance of the difference between the means observed in the pretest measures obtained by the experimental group and those obtained by the control group. The variance includes phonics and reading. Throughout this study the significance of the difference between means was determined by the F–Test at the .05 level of confidence.

THE EFFECTIVENESS OF THE SULLIVAN PROGRAMED METHOD AND THE HOUGHTON MIFFLIN METHOD IN THIRD GRADE REMEDIAL READING

A systematic comparison of equated groups was made to determine pupil achievement in 3rd grade reading. Two sequentially planned techniques, the Sullivan Programed Method and the Houghton Mifflin Method, were used for the study. The study concerned itself with 40 pupils. The children were transported to the center from 10 public and two parochial schools of this city. The classes were culturally integrated and consisted of children of Afro-American, Mexican-American, and Anglo descent. Some of the learners came from educationally and economically deprived homes. The experimentation took place during the fall semester of the 1968–69 school year.

In determining pupil achievement brought about by the instruction under the two teaching techniques, comparisons were made. The significance of mean relationships was appraised utilizing the T-Test.

Evidence from the study indicates the Sullivan Programed Series to be very effective for children with perceptual difficulties and for those who are slow learners.

HEARING SURVEY OF STUDENTS ENROLLED IN SPEECH THERAPY PROGRAM

This project consisted of a hearing survey of all students enrolled in the speech therapy program at the Special Services Center. Students tested ranged in age from 4 to 14 years. This project involved preschool through the ninth grade children. The total number of students enrolled in the speech therapy program was 118.

Air and bone conduction tests were administered. The purpose of the project was to determine if there was a significant percentage of students with a hearing loss in accordance with the type of speech problem the child might have.

AREA HEARING SURVEY

Questionnaires pertaining to information on deaf and hard-of-hearing students in this general area were sent from the center to the parents of all elementary school children in the Clovis Public Schools.

Children referred from these questionnaires were given both air and bone conduction hearing tests to determine the type and degree of hearing loss. The rationalization for this study was to determine need in this particular area for segregated classes for the hard-of-hearing.

RESEARCH FOR 1969–70 SCHOOL YEAR

1. Speech and Language Survey

Second grade students in the Clovis Public Schools were given speech and language tests in the fall of 1969 to determine the number and kind of speech and language problems. Etiological and environmental factors were considered and studied. The language of the bilingual child was studied in relationship to success and failure in academics. Speech and language classes were set up in accordance to findings.

2. Perceptual Handicaps

In the area of perceptual handicaps, two 1st grade rooms were evaluated—one class of environmentally deprived children from the lower socioeconomic area and another class of first graders from a middle class environment. These studies were conducted by personnel in the center under the direction of professional consultants specifically trained in these areas. Plans are to expand these services as children are diagnosed.

Regional Services Center

The present Special Services Center has dramatically indicated the need for a Regional Services Center which will serve eight counties in New Mexico.

The final part of this paper considers the process of restructuring the Special Services Center to a Regional Services Center. The regional concept would include all the services provided in the Clovis Special Services Center for all of eastern New Mexico and additional innovative concepts which will be discussed in this section. The four segments to be considered include (1) needs assessment survey; (2) objective setting; (3) data processing; and (4) migrant children.

A random sampling of schools in eastern New Mexico was made for these specific purposes:

1. To study ethnic groups to determine their academic needs in a comparison to each other in this region and a comparison with national norms.
2. To determine the validity of random sampling in this region for an indepth study to determine the extensiveness of handicapped children by ethnic groups.
3. To gain experience for structuring a random sampling of handicapped children to determine percentage of handicaps by ethnic groups.
4. To provide program assessment, data processing record keeping services for migrant children in eastern New Mexico.

Upon completion of the establishment of needs priorities, objectives for the regional center will be determined by a specific process. The need to determine, refine, and evaluate objectives at all levels is critical to optimum performance of the regional services. These objectives will be determined by the Regional Advisory Council composed of district superintendents.

Objectives are used primarily in four ways in an educational organization. They are used by the board and top level administration for *policymaking*. They are used by middle level management as *programs* are developed to implement policies and as programs are evaluated and modified. The *curricular* and in-instructional staff use "objectives" as they modify and elaborate curriculum. The *instructional* staff uses "objectives" as decisionmaking tools as instruction and evaluation are developed and implemented. Therefore, it is proposed that four types of objectives be recognized: policy objectives, program objectives, curricular objectives, and instructional objectives.

A data processing unit has been established for the region. Data from the needs analysis studies, objective setting procedures, and other research sources will be stored in the computer to facilitate services for the handicapped. The computer program will offer

services for regional use to program and store information on all handicapped children in the region. The program information would enable the computer to diagnose learning disabilities and types of emotional difficulties.

The computer would also store information on all migrant children in the region for servicing records and data processing for vital information on the child's disabilities.

The needs assessment study was made on 14 percent of the total school population in the region. The 5th, 8th, and 11th grades were tested. The California Test of Basic Skills and the California Test of Mental Maturity were used. The test scores were fed into the Regional Center computer and the projections made on graphs.

Area III of eastern New Mexico is included in the student population tested. The data for grade 5 showed the following results:

> The entire population of grade 5, including all ethnic groups, tested at 5.7, which was their anticipated achievement grade equivalent. However, the breakdown by ethnic groups shows the Anglo student at 6.4 level of achievement, the Spanish-American student at 5.2 level of achievement, and the Indian student at the 4.4 level of achievement.
>
> The entire population of grade 8, including all ethnic groups, tested at grade level 9.0. Their anticipated grade level was 8.7. However, the breakdown by ethnic groups shows the Anglo student at the 9.4 level of achievement, the Spanish-American student at the 7.3 level of achievement, and the Indian student at the 5.6 level of achievement.
>
> The entire population of grade 11, including all ethnic groups, tested at 10.6. Their anticipated grade level was 11.3. However, a breakdown by ethnic groups shows the Anglo student at the 11.4 grade level of achievement, the Spanish-American student at the 9.5 level of achievement and the Indian student at the 8.6 level of achievement.

The California Achievement Test, the California Test of Basic Skills, and the California Test of Mental Maturity were used in the survey. A total of 1,656 students was tested in grade 11, 1,256 in grade 8, and 1,475 in grade 5. Tests indicate the critical needs of Indian and Spanish-American students.

A unique outcome of the testing indicates that student achievement is directly proportionate to the size of the school. Schools with student populations of over 5,000 reported the highest scores while schools of less than 500 students recorded the lowest scores.

Another test is being constructed to determine the degree of handicaps in the regional schools and the data will be processed by the regional computer and projected by graphs. The needs will then be given priorities.

Title III ESEA funds have had a dramatic impact on education for the handicapped in eastern New Mexico. From these funds have come innovative programs to serve the handicapped child, especially from the low-income ethnic groups.

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A Comprehensive Physical Education Program for the Severely Physically Handicapped

There are at Jefferson High School in Rochester, N.Y., 48 pupils who are severely physically handicapped. This thesis will be devoted to the manner in which physical education may be adapted to meet more adequately the physical and mental needs of these children and hopefully to induce other school districts to incorporate similar programs.

"The handicapped child consciously, or otherwise, seeks help in minimizing or overcoming his disability as well as acquiring a general education. The school should strive earnestly and effectively to aid the pupil in accomplishing these goals. In doing so it must be recognized, for instance, that the general program of physical education is designed for pupils who have no restrictions placed on their activity. Taking cognizance of this fact, two courses of action commonly have been pursued with handicapped pupils. The first has been to excuse the child, and the second has been to place him in a 'corrective program.' Neither course of action has been found adequate in terms of the child's total needs or the potentialities of the school for meeting these needs." [1]

[1] Arthur S. Daniels, "Physical Education and Exceptional Children," *Adapted Physical Education,* Harper and Brothers, New York, 1954, pp. 8–9.

Our desire at Jefferson was to provide an adequate physical education program adapted to the limitations of the youngsters. We were not concerned with providing a physiotherapy program, although secondary outcomes might include physical improvement, but rather an actual adapted physical education course of instruction which would be pleasant, enjoyable, and active within the limits of their handicaps.

The aim of the program was the same as that of regular physical education. "In adapted physical education, the effort is made to help the student take his place in the social and economic world as a citizen who is respected for his general qualities and capabilities. He is given an opportunity for the fullest development of his physical, social, and economic potentialities in an environment that is friendly and informal. In this developmental experience he is guided by understanding teachers. Under these conditions he learns how he can earn his place as a member of a social group, not trading on his disability, but utilizing his abilities.

"All pupils, regardless of the disability, should have an opportunity to participate in social recreation situations. It is believed that if a pupil can come to school, there is some mild form of activity in which he can safely engage.[2]

"The aim of an adapted program is to provide through competent leadership, a diversified program of developmental activities, games, sports, and rhythms suited to interests, capacities, and limitations of students with disabilities who may not safely or

[2] *Ibid.*, p. 81.

successfully engage in unrestricted participation in the vigorous activities of the general physical education program." [3]

Based on the foregoing the following objectives are listed:

1. *To provide a pleasant, enjoyable, and as physically active a program as possible within the limits of the students' handicaps.* There are many activities–some mild, some active–in which the student can engage. Fortunately the activities offered have carry-over value–once learned, the pupil can use them in later life.

   Evaluation–The curriculum provided an active program. A variety of activities was made available which included physical training using many different types of equipment for strength development, recreational games of all kinds, and several more active type activities. (See listing on page 20.

2. *To develop to the fullest, and this may be very limited, the physical capacity of the youngster by having him engage in adapted physical education.* "The newer trend in many schools is away from the correction of the physical defect by formal exercises and toward the provision of the advantages and opportunities available through games and sports activities properly supervised and adapted to the needs of the typical student. This newer trend takes the physically handicapped individual as he is with respect for what he may become, helps him to help himself, and contributes to the better health and efficiency of the total individual." [4]

   Evaluation–The youngsters have demonstrated an improvement in range of motion and physical strength in a limited capacity. The hope for actual improvement in condition is somewhat guarded; however, retention of status quo rather than further loss is an objective well within reach and has been maintained.

3. *To promote good mental attitudes and an outlet for surplus energies.* "Play with its emotional uplift, is as necessary as work and leisure for the individual." [5] "The principles involved in recreational therapy for the mentally ill may well be used as a preventive for many of the so-called normal individuals whose drives and desires have not been adequately expressed." [6] The handicapped child has the need to belong, to achieve success in an endeavor as does the normal child. "The psychiatrist and the psychologist recognize sports and games as ideal outlets for the expression of the fundamental drives, desires, and urges, which are often thwarted and unexpressed. Play is a necessity for relief from the monotony and strain of work. The child's usual activity is not sufficient to absorb his available energy." [7]

   Evaluation–The mental attitude is something that is difficult to ascertain. However, a critical look at the youngsters from the beginning of the year to the present time will indicate a marked improvement in their outlooks on life and their surroundings. Their cheerful, pleasant attitudes belie the problems that beset these children daily.

4. *To provide a complete program so that no child would be exempt from physical education.* The program should be set up to include all types of activities. It should be adapted and made simple in execution so all ambulatory cases may participate. Social and quiet games, i.e., chess, cards, etc., should be included so heart cases will not be eliminated.

   Evaluation–At the present time all 48 children have been scheduled to take gym at least three times per week. Many are involved five times in the gym program. The activities guarantee something in which every child can participate regardless of disability. Ambulatory cases, heart problems, and even youngsters carrying catheters are engaging in some form of activity.

5. *To provide activities for fun.* The adapted physical education program should be instructional; however, many activities should be included which are played for enjoyment and for the social values derived.

   Evaluation–Skills are taught, attention is given to muscle tone, but the primary concern in the activities provided is the atmosphere of fun. The meeting of all objectives is handled with the philosophy that improvement of instruction is done with the fun vehicle.

6. *To create an atmosphere which will reveal to the student his strengths and not his weaknesses.* "A program of adapted physical education which will help the individual increase his strength, range of movement, improve coordi-

[3] *Ibid.*, p. 82.

[4] George T. Stafford, Ed.D., *Sports for the Handicapped, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1947, pp. 6–7.*

[5] *Ibid.*, pp. 12–13.

[6] *Ibid.*, pp. 36–37.

[7] *Ibid.*, p. 36.

nation and endurance, is rendering an invaluable service. If walking is improved, stair climbing becomes less of a problem, and the hundreds of daily acts are accomplished with less fatigue and with greater efficiency, and the handicapped person experiences a vastly improved total living situation. He becomes less dependent and feels more secure in his ability to meet his own needs. An individual program of carefully designed developmental exercises, rhythms, games, and sports can contribute a great deal toward improving total function." [8]

Evaluation—Attention is given exclusively to what the child can do. Emphasis is provided to activities that the youngster can do with success and what he cannot do is ignored. Areas in the school are utilized in allowing the child to be successful in mastering daily acts of stair climbing, independent motion and movement, and becoming more secure in his ability to meet his everyday needs.

7. *To provide activities as similar to those of the regular program within an adapted philosophy.* The items included in the orthopedic block were set up as much as feasible to complement those in the regular physical education block program. For example, when the pupils are engaging in soccer during the soccer season, the people in the orthopedic program will also be in soccer activities. A similar system is used in basketball, apparatus, weight training, track, etc. The activity may be of a recreational game type as well as group mass play.

   Evaluation—The provision is made whereby the student engages in programs similar to those of the regular students' activities. This enables the handicapped child to feel that he is a part of the school community, so less stigma is attached to his condition. He is made to feel as normal as possible.

8. *To provide an atmosphere for learning rules, philosophy, safety procedures, and health habits by encouraging physical growth to their optimal level.* The pupil will learn to play within the spirit of the rules of the game in which he is engaging. He must learn to handle his handicap safely while participating in various types of activities. Opportunities will arise which will enable the teacher to use the technique of incidental health teaching in regard to physical conditioning, ways to improve endurance, etc.

   Evaluation—Rules, philosophy of games, safety procedures, and health habits were uppermost in the minds of participants and teachers so discipline is maintained and growth in spirit is achieved. Many games are from foreign lands so some cultural training is gathered in an incidental way. Teachers find opportunity to provide health training habits as the games progress.

9. *To promote good student-teacher rapport.* "Rapport involves more than mere cooperation with the participants and requires that the teacher consistently look for ways in which he can make the handicapped person feel more at ease and comfortable. An out-going role must be played by the teacher because the handicapped person is not apt to take the lead in developing active participation in activities. This kind and persuasive manner should have no element of force in it. Patience is the byword of the teacher's technique. Time and time again the handicapped person may not respond. Persistent efforts should be made by the teacher in order to secure the proper reactions from specific individuals." [9]

   "The teacher should know all about the student—his disability, his attitude toward it, his attitudes toward life in general, his hopes and fears. Only under these conditions is the teacher in a real position to help. The willingness to help must be fortified by the knowledge of how to help. Due to varying needs and abilities of pupils, the teacher must be able to exercise flexibility in carrying out the established program." [10]

   Evaluation—Because of the close proximity of teacher and pupil, in some cases a one-to-one ratio, teacher-pupil rapport is excellent. The teachers actively engage in games with pupils. Flexibility, patience, and gentle persuasiveness are used as techniques to achieve the established desired outcomes of each individual class.

10. *To evaluate and grade the progress of pupils in order to keep the parents abreast of their status.*

    Evaluation—Constant communication is maintained with the home and Jefferson's central orthopedic office to keep parents currently informed of their child's progress. A reevalua-

[8] Daniels, *op. cit.*, p. 87.

[9] Frederick M. Chapman, "Leadership of Activities," *Recreational Activities for the Handicapped*, The Ronald Press Co., New York, 1960, p. 22.

[10] Daniels, *op. cit.*, pp. 93–94.

tion of program, equipment, and physical condition is always under scrutiny.

11. *To provide the beginning of a happy, satisfying and worthwhile life in the present and future for this group.* "An orthopedic program may be the only means available for the handicapped person to narrow the gap which exists between himself and others he wants so much to be like. Recreational sports and games are invaluable in providing opportunities for satisfying desires basic to all of us. The potentials for belonging, being wanted, and even getting a little recognition lie strongly within the recreational experience. A handicapped person who can become skilled in an activity valued by his group, develops a feeling of adequacy. He acquires a status within the group not previously attained." [11] These outcomes have carryover into the handicapped person's life which will better enable him to meet other obstacles.

Evaluation—A review of the people who have been graduated from the program and have taken their places in society will reveal a group of happy, independent, useful citizens who have learned to live with their handicaps and have made many worthwhile contributions to the community.

Procedures and Methods

The teacher, understandably, is an important factor in the success of the adapted physical education program. He must be able to translate medical findings into desirable activity experience. He must have at his command an excellent repertoire of the various recreational activities which can be called upon for use in a flexible situation. The teacher must have the desire to give all the time and effort necessary to help the youngsters move toward their goals, overcoming the many difficulties encountered. Even with the best background, personality, and willingness, the teacher must keep several special methods and procedures in mind as insurance for complete success. They are as follows:

1. Verbal directions should be few and simple but complete. It is undesirable to have too many complex rules and directions to follow. A more direct course would be to adapt the activity simply but within the spirit of the game so the outcome will be apparent to all participants.
2. Teacher participation is an excellent teaching device. This technique manifests itself particularly in the pool. Confidence can be instilled in the youngster if the teacher is with him—guiding, demonstrating, and being in a sense a part of the handicapped person himself.
3. Praise is extremely important in helping the handicapped child feel a sense of improvement. Encouragement in the effort put forth will go a long way in motivating the child. It must be kept in mind that perfection in skills is not a goal in the orthopedic program.
4. The time allotted should be budgeted so a minimum of time is spent in preparation for the activity. Practices should be short to enable the pupils to begin the activity as soon as they are ready. If too much time is spent on practicing, a regression in performance may occur leading to frustration.
5. New activities should be introduced frequently to keep interest and desire at a high level. It is imperative not to let an activity die on its own but rather stop it while interest is high so that the pupils will want to return to it at a later time. However, wise judgment must be considered here because the handicapped pupils will want to participate in those activities they have mastered and can engage in with reasonable success. Therefore, it would be advantageous to return to a skill perhaps with a varied or different approach for repetition and review. Take several roads to the same destination.
6. There is a definite margin for error and mistakes that will be made. Modification will have to be made and a policy of constant evaluation will have to be in effect. The teacher must have unlimited patience. If an activity does not work, the reasons must be analyzed and the activity modified or perhaps dropped completely and replaced with something else.
7. Each time the handicapped person comes to gym is a new day. One can never be sure what problems or frustrations have burdened the child since the last meeting. His levels and plateaus may be frequent and sudden. Therefore, the teacher must be continually restimulating and remotivating the student.
8. It is desirable to have all children participating in the activity. It must be expected that the youngsters engage in the activities. A child will not be babied but the prodding should be gentle with understanding and compassion for his difficulties.
9. There will be ample opportunity for incidental

[11] Daniels, *op. cit.*, pp. 86–87.

teaching in the area of health. Cleanliness, diet, rest and sleep, and care of defects and disease are among the topics that should be included.

10. "Instruction must be slow, deliberate and progressive. Small, sequential, and concrete steps should be followed in presenting material. 'Make haste slowly.' "[12]
11. "Guidance of these individuals in many facets of their lives becomes a major responsibility of the physical education instructor because tremendous rapport is built between child and teacher. Such activities will be both of a formal and informal nature."[13]
12. "Grading and evaluation should be an objective appraisal of the progress each individual has made in the attainment of class objectives. This should be supplemented by a narrative report to the parents of the child's status and progress."[14]

Administrative Considerations

In evolving an orthopedic program of this type several problems of an administrative nature must be taken into consideration and solved, at least to a temporary degree.

1. *Parental approval.* It is understood that parents of ambulatory children are deeply concerned about the types of programs in which their children are engaging. To insure that the program meets with the approval of the parents, a letter should be sent to all concerned before a child is entered.
2. *Class size.* The size of the class will be dependent upon the number of handicapped children in school. It is proposed that the pupil-teacher ratio would be 5:1. In the aquatic program there will be a 1:1 ratio. The use of student leaders will aid in meeting this requirement.
3. *Periods per week.* Ideally the class should meet five periods per week. The minimum allotment should be two periods per week.
4. *Length of periods.* The time length should be the same as those of the regular class. There should be some flexibility as the pupils must be wheeled to and from class.
5. *Student leadership.* The use of students is an important aid in the preparation of the children for activities. The regular students can be obtained from study halls so as not to miss any of their school work. They can help in bringing the children to class, dressing and undressing for swimming, removing braces, assisting in the organization of games, and acting as referees and umpires.

There are several outcomes that are desired. After a trial period the program should be evaluated in light of setbacks or real progress made with the students. Suffice it to say more are in the hopeful stage than perhaps will ever become realities. Several of these are as follows:

1. "The student will be better able to cope with his conditions.
2. Greater independence will be achieved by the handicapped individual.
3. The student's desire to get along better with others will be boosted.
4. The student's faculties can improve to enable greater scholastic improvement. This involves alternating periods of stress and relaxation.
5. The pupil will see his potential and will attempt to develop it." [15]
6. The student will be in experiences for improving physical growth up to his potential.
7. The child will be having some fun leading to a zest for life.
8. The child will experience success which will diminish the possibility of an inferiority complex.
9. The handicapped person will have a sense of belonging.
10. The child will develop a pride in his school.

Progression from Mass Class to an Individual Gym Program

It is the consensus of opinion that the orthopedic gym program is a highly successful operation. Mistakes are made as is expected in selection of activities and materials; however, most of the program is extremely well received by the participating youngsters. Parents are solid in their support; and administrators, faculty, students, and experts in the orthopedic field are most gracious in their support and advice.

Discussions held informally as well as in the form of written evaluations show an overwhelming degree of enthusiasm for continuation of the program. There is also a desire for expanding the time allotment to include a driver education course and some art work

[12] Julian U. Stein, "Adapted Physical Education for the Educable Mentally Handicapped" *J.O.H.P.E.R.*, December 1962, Vol. 33, No. 9, p. 51.
[13] *Ibid.*
[14] *Ibid.*

[15] John R. Schoon, "Some Psychological Factors in Motivating Handicapped Students in Adapted Physical Education," *The Physical Educator*, Vol. 19, No. 4, December 1962, pp. 138–140.

to supplement the regular physical education and recreational programs. The youngsters indicated they would like to come to the gym 5 days per week.

Careful analysis of the submitted reports indicates everyone concerned with participation, administration, teaching, or just observing the orthopedic class is sold on its value, as a physical conditioner, developer of health attitudes, and provider of fun for all the youngsters.

Interest in athletics is stimulated to a degree that several of the boys have volunteered to serve as managers for junior varsity and varsity teams—proof of their value and worth to their school.

The high ratings received by the program gave credence to the fact that somehow all handicapped children must be given the opportunity to become involved. With the authorizations provided by the Elementary and Secondary Education Act, a means became available for expanding the program by the incorporation of needed equipment and the hiring of additional personnel to insure that every child be scheduled every day of the weerk. A report was submitted, evaluated, and approved. Plans were formulated and put into operation with the following format:

The students (one or more) come to the class and are met by a teacher. The pupils then change into gym clothes in a private dressing (locker) room area and proceed to the physical therapy room. A regular program of physical training (based on recommendations of the school's orthopedic surgeon in consultation with pupil's personal doctor) is administered. This phase of the class continues for 10 minutes. The teacher next provides the core section of the class which might consist of such activities as participation in a recreational game or instruction in a carry-over sport such as archery, bowling, or swimming. The child then returns to the private orthopedic shower room for a refreshing shower, dresses, and returns to his academic classes.

The program was initiated in September 1968 and 48 youngsters with various degrees of disability, both boys and girls, participated. The following items were constantly kept in mind throughout the school year:

1. All children had an opportunity to participate.
2. An active and diversified program was available and utilized.
3. The children had fun in many of the activities.
4. Attention was given to developing physical fitness, learning rules of games and playing within the spirit of these rules, all of which help to promote good mental attitudes.
5. An atmosphere was provided in which the youngsters could discover and develop their strengths.
6. Devices included: simple directions; teacher participation; liberal use of praise and encouragement; progressive steps to insure learning of skills and techniques; and development of excellent teacher-student rapport.

Statement of Need

Education and Cultural Facilities and Resources

The City School District of Rochester includes 43 elementary schools, eight comprehensive high schools, and one technical and industrial high school. In addition, the school system is involved in such programs as a Manpower Development and Training Center and a series of preschool programs supported through the local Community Action Program funded under the Economic Opportunity Act. As a participating member of the Genesee Valley School Development Association, the Rochester city school system is part of a cooperative educational enterprise involving 40 school districts.

Rochester and surrounding towns are the homes of numerous institutions of higher education: University of Rochester, St. John Fisher College, Nazareth College, Roberts Wesleyan College, Colgate Rochester Divinity School, Rochester Institute of Technology, State University Colleges at Brockport and Genesee, and Monroe Community College.

Rochester is most fortunate in having an excellent library system, the Memorial Art Gallery, and the Museum of Arts and Sciences. It is also well known as the home of the Rochester Philharmonic Orchestra and the Eastman School of Music. In addition, the Community Players and the new Theatre East attest to the interest of the residents of Rochester in drama.

There are 101 social agencies in the Rochester area cooperatively joined under a Council of Social Agencies for Rochester and Monroe County.

Rochester has an international reputation as the home of many well-known industries which work cooperatively with the local Chamber of Commerce and also as participants in an Industrial Management Council.

In addition, the services of the Monroe County Health Bureau, Day Care Training Center for Handicapped Children in Monroe County, Inc., United Cerebral Palsy Association of Rochester Area, Inc., the Special Education Department and the Pupil Personnel Services Division of the City School District, as

well as the services of the Division of Health and Physical Education and Recreation of the New York State Education Division, will be available.

It will be a function of the planning group of this project to coordinate and articulate the many facilities available with the purposes and activities that are described in this application.

Determination of Needs and Priorities

Since one of the primary objectives of public education is to provide each child with educational experiences most appropriate to his needs, interests, and ability, it is essential that a suitable program be offered the child with severe physical handicaps. The City School District has been faced with the problem of providing continuous and appropriate educational opportunities for such children. It has found that the number of such children is limited in any one school. Moreover, it has been demonstrated that severely physically handicapped children may profit from regular classroom experiences, if they are fortunate enough to have an experienced, sympathetic, and understanding teacher who provides a comprehensive program and who has the time and energy to work closely with each child. Unfortunately, for many handicapped children such optimum conditions are not usually available.

A limited physical education program for handicapped children was started at Jefferson High School in 1964 when there were only 20 such pupils enrolled in this school. This program was made possible through the voluntary efforts of the physical education staff. No specialized equipment was available and no staff was assigned to the program. Despite these limitations, the activities attracted the attention of City School District staff as well as staff from Monroe County Public and Parochial Schools.

The operation of physical education classes for the handicapped within the City School District has aroused the interest of some suburban parents to place their children into these classes. As a direct result, the number of pupils seeking this program has doubled.

The City School District, recognizing the need for providing special facilities for physically handicapped pupils, has remodeled a large locker room to provide two additional rooms to serve handicapped pupils in the physical education program.

To provide a comprehensive program for this number of pupils, as well as to prepare for an anticipated increase in the number of such pupils, demands the services of full-time staff. This project has grown out of recognition of this need. Further, equipment is required to provide a more comprehensive program.

This project was one of approximately 20 submitted to the Superintendent of Schools for consideration. A review committee of teachers and administrators recommended that it be submitted as one of six projects from the City School District of Rochester. At a later meeting between City School District staff and the coordinator of title III ESEA in the New York State Education Department it was decided that this exemplary project be submitted as one of two projects from the City School District of Rochester.

Rationale for Planning Grant as Best Solution to Meet Needs

Since this project is exemplary, this grant is designed to provide a most comprehensive program for the severely handicapped. The cooperation of the local, State, and national agencies has been promised in order to accomplish this project.

A special grant appears to be the most rapid method for the accomplishment of this exemplary project.

Program Emphasis

The severely handicapped student must be given every opportunity to achieve equal rights in the availability of educational opportunities. Experience to date has shown that conflicts in school scheduling, lack of teaching staff, and transportation difficulties have made it extremely difficult to schedule all handicapped students to attend classes in health, physical education, and driver education. This means some handicapped children do not have an opportunity to exercise their usable muscles but are confined to their wheelchairs, braces, or crutches for the entire school day.

This proposal calls for the assignment of three physical education specialists to facilitate the establishment of an exemplary physical education program. This program will be scheduled to insure that every handicapped student has one period of activity daily.

The personnel will supervise physical education and swimming activities and therapy as prescribed by the student's doctor or the school orthopedic specialist. Personnel will also supervise the use of therapy equipment and showers and assist in dressing the handicapped.

The program will include:

Physical Education Activities

1. Swimming
2. Weight training and a regular exercise program that would encompass both isometric and isotonic activities
3. Walking and hiking–both outside or inside on a treadmill
4. Archery
5. Badminton
6. Horseshoes
7. Apparatus–Exer-Genie, rowing machines, bicycle machine, etc.
8. Basketball and other ball skills that can be taught individually
9. Table tennis
10. Tennis
11. Rhythmics
12. Track and field events–all the events that can be practiced for the National Wheelchair Games and the Paraolympics (wheelchair dashes, shot put, javelin, discus, wheelchair slalom, etc.)

Recreational Activities

1. Archery
2. Bowling
3. Table tennis
4. Golf
5. Riflery
6. Dart throwing
7. Horseshoes
8. Shuffleboard
9. Fly casting
10. Pool and billiards
11. Quiet games (chess, checkers, etc.)
12. Arts and crafts
13. Music appreciation and musical games (rhythms)
14. Camping skills and activities
15. Croquet

Driver Education

Driver education will inspire confidence and independence in the physically handicapped youngster and will permit him to take his rightful place in society.

This program will be available to the physically handicapped. When scheduled for driver education, the student will be assigned to two periods per week behind-the-wheel and two periods of theory.

Planning of Program

Planning Participants

1. Education and Local Agency Participation

The chief consultant in health and physical education for the city school district, the director of special education for the city school district, the physical education staff at Jefferson High School, the helping teacher for the physically handicapped at Jefferson High School, the principals of the schools, and Dr. William Howe, the school orthopedic physician, met several times to plan this exemplary program. The supervisor of physical therapists and the school medical director of the Monroe County Health Bureau were also involved. Letters of involvement are incorporated in the assurances as evidence of interest.

2. Participation of Teachers

This project provides for the involvement of teachers and staffs from the cooperating agencies in workshops, evaluation procedures, and critiques.

Description of Planning, Methods, and Procedures

Jefferson High School is the receiving school for the severely physically handicapped. The department head of health and physical education and the project director recognized the need for a good program of physical education and recreation. The director and the assistant director of health and physical education for New York were consulted as well as the consultant for title III projects in the New York State Education Department.

Review of the literature indicates that few programs of this kind exist throughout the country. No program of this kind exists in the public schools of New York State.

The acting vice principal of Jefferson High School, the department head of health and physical education at Jefferson High School, and the chief consultant for health and physical education, City School District of Rochester, met with county and city health officials to discuss and plan the proposed project.

Facilities, Equipment, and Materials Being Used

Facilities

Jefferson High School facilities

two gymnasiums–60′ x 90′ each
swimming pool–35′ x 75′
two new rooms
two tennis courts (outdoors)
two blacktop basketball courts (outdoors)

Equipment and Materials Purchased and Now Being Used

Equipment needed for this project tends to be unique in nature. It is not the type of equipment normally found in or available through the regular physical education program. The following specialized equipment is essential to provide physical education and recreation for severely physically handicapped children:

Platform mates 6′ x 8′ x 18″	2
Parallel bars (walker adjustable)	2
Walkerettes–folding	4
Lumex aluminum adjustable canes	6
Handy Standy splint sets	2
Stationary bicycles	2
Stretchaways	35
Losstrand crutches (adjustable aluminum)	6
Adjustable canes	6
Standard wooden crutches	6
Book carriers for wheelchairs	35
Archery mats	4
Easels to hold archery mats	4
Archery target faces 48″	24
Archery gloves	12
Aluminum ground quivers	6
Archery arm guards	12
Target arrows 24″	1 gross
Target arrows 26″	½ gross
Archery bows 20 lb.	12
25 lb.	6
30 lb.	2
Archery backstop net (10′ Hi x 20′)	1
Dart boards	2
Rocket darts (suction cup)	2 sets
Combination dart sets (baseball and dart game)	2 sets
Indoor rubber horseshoes	2 sets
Deck tennis rings	4
Rubber quoit sets	2
Safe-T-Way bowling (plastic)	2 sets
Candlepin bowling	1 set
Mats (folding type) 4′ x 5′	10
Rubber chest exercisers	12
Folding table tennis table	1
Table tennis paddles	8
Table tennis net	1
Table tennis brackets for net	1 pair
Table tennis balls	1 dozen
Croquet sets	1
Game room shuffleboard sets	2
Billiard table	1
Isometric–Isotonic Trainer (multiple purpose and use) four stations	1
Art and handicraft materials	
Chess, checkers, Monopoly games	
Roll-out tetherball set	1
Weight training equipment	
Record player	
Records	
Movie camera 8mm and projector	
8mm film	10 rolls
Swimming safety belts	
Oyer lift	
Rowing machine	
Chest pulley weights	
Portable ramp for swimming pool	
Equipment to be recommended by M.D.	

Conclusion

It was felt that, in retrospect, the following outcomes have been achieved:

1. Students were better able to cope with their handicaps.
2. Students achieved greater independence.
3. Students indicated a keen desire to improve their skills and physical development.
4. Students had fun in many activities.
5. Students developed a pride in succeeding in athletics.
6. Students had a sense of belonging.
7. Students developed more strength.
8. Students developed an interest in athletics; several boys volunteered to serve as managers for the varsity teams.

ADAPTED PHYSICAL EDUCATION PROGRAM FOR ORTHOPEDIC STUDENTS

Jefferson High School
1968–69

	Physical Education		Swimming		
	Registration	Sept. 4	Registration		
	Orientation	9	Orientation		
			SKILLS	GAMES AND STUNTS	
Sept. 16–30	Archery, dart throwing, mild hiking	Sept. 16	Breathing holding	Count fingers underwater	
BLOCK	" " " " "	Sept. 23	Prone float	Floating for time	
1	" " " " "	30	Back float	Jellyfish, prone & back	
Oct. 7–21	Adapted soccer, horseshoes, walking	Oct. 7	Push off, kick, glide	Front glide for distance	
BLOCK	Goal ball, horseshoes, walking	14	Change direction	Chain swimming	
II	Line soccer, horseshoes, walking	21	Turning over	Front somersault	
	Wheelchair soccer, horseshoes, walking				
Oct. 28–	Basketball activities, quiet social games	28	Porpoising	Porpoising race	
Nov. 18	Skills, passing, shooting movement, checkers, chess	Nov. 4	Treading water	Treading water for time	
BLOCK	Free throws, card games	11	Sculling	Sculling, head first, feet first	
III	Adapted wheelchair basketball, guessing games	18	Fin and winging	Water volleyball	
Nov. 25–	Volleyball, badminton, table tennis	25	Gradually more into .. deep end	Log rolling	
Dec. 9	" " " "				
BLOCK	" " " "	Dec. 2	Harness (floating threading, swimming)	Bobbing, number and distance	
IV	" " " "	9	Human stroke	Water tag	
Dec. 16–	Weight training, rhythmics	16	Side stroke	Come over tag	
Jan. 13.	Weight-isometric exercises; rhythmics-square	Jan. 6	Crawl stroke	Keep away	
BLOCK	dumbells dancing	13	Breast stroke	Follow the leader	
V	Weight-pulleys; rhythmics–social dancing				
Jan. 20–	WEIGHT TRAINING RHYTHMICS	20	Elem. back stroke	Safety tag	
Feb. 3	Bar bells, Music appreciation	Jan. 27	BEGINNERS		
BLOCK	Rotators Music games	Feb. 3	Face float		
VI	Rowing–isotonic exercises				
Feb. 10–24	Apparatus–tumbling, visual aides	10	Back float		
BLOCK	Apparatus, balance beam, tumbling, movies	17	Bobbing		
VII	Apparatus, low parallel bars, tumbling, arts and crafts	24	Swim–turn to back .... float		
Mar. 2–16	Apparatus, horse, tumbling, arts and crafts	Mar. 2	Back float–turn ..... and swim		
BLOCK	Apparatus, low horizontal bars, tumbling, art ap-	9	Fin or wing		
VIII	preciation, Apparatus, low horizontal bars, tumbling, painting, etc.	16	A.R.C. Deep Water .. Test		
Mar. 23–	Apparatus, tumbling, art appreciation, painting, etc.				
Apr. 13	" " " " " "	Apr. 6	INTERMEDIATES		
BLOCK	" " " " " "	13	Back Float–deep ..... water		
IX		20	Elem. back stroke		
Apr. 27–	Group games, shuffleboard, clock golf	27	Dive–swim ..... underwater		
May 11	Putting, tag games, modified bowling		Tread water		
BLOCK	Circle games, chasing-fleeing, and ball activities		5-minute swim		
X					

ADAPTED PHYSICAL EDUCATION PROGRAM FOR ORTHOPEDIC STUDENTS—Continued

Jefferson High School
1968–69

Physical Education		Swimming		
	Registration	Sept. 4	Registration	
	Orientation	9	Orientation	
			SKILLS	GAMES AND STUNTS
			SWIMMERS	
May 18–June 1	Adapted softball, field hockey, fly casting	May 4	Surface dive	
	" " " " " "	11	Swim on back–..... legs or arms only	
BLOCK XI	" " " " " "	18	Back crawl	
		25	Free style	
June 8–15 BLOCK XII	Track program–horseshoes, walking Softball throw, horseshoes, walking Wheel chair races Dashes, paper disc throw, etc.	June 1	Dive off springboard....	
		8	10-minute swim	
		15	Recreational swim	
EXAMS		EXAMS		

TRACK EIGHT–

Jefferson High School
PROGRAM—ORTHO I (INDIVIDUAL)

Physical Training	Recreational Games	Physical Activities
Rubber chest exercises	1. Quiet Games (KIT)	1. Hiking
Olympic weights	Social games (mixers)	2. Photography (movie and still)
Rowing machine	Mental games (Kit E)	3. Swimming and aquatics
Pulleys	Brain Teasers	4. Shuffleboard
Table and Bars	Word Games	5. Adapted Tennis
One-wheel bike	Puzzles	6. Adapted Paddleball
Pulley machines	2. Maze Game	7. Golf and Archery
Walker–standing	3. Marble football	8. Horseshoes
Ramp and stairs	4. Korean yost	9. Quoits
Calisthenics–adapted program	5. Chinese Checkers	10. Croquet
	6. Chest-checkers	11. Lawn Bowling
	7. Chongkak–Aee Dee	12. Table Tennis
	8. Puzzles	13. French Hoop game
	Nine Block	14. Hand Wrestling
	Pyramid	15. Rhythms varied
	Tangram	16. Deck Tennis
	Shuttle puzzle	17. Clock golf
	Two-piece pyramid	18. Bowling–regulation rubber
	9. Arts and crafts	19. Candle Pin
	10. Skittles	20. Pool Table–Billiards
	11. Table cricket	21. Basket Shooting–(Ortho basket)
	12. Box hockey	22. Letterball
	13. Dutch shuffleboard	23. Bocci
	14. Fore-Par	24. Track & Field
	15. Hockey Pool	Javelin
	16. Pocket Golf	Discus
	17. Scoop golf	Shot Put
	18. Pic-E-U-Nee	Obstacle (slaloms)
	19. Shoot the Moon	25. Darts and Jarts
	20. Mexican Bolero	
	21. Labyrinth	
	22. Roll Around	
	23. Three Dimensional Tick-Tack-Toe	
	24. Nine Men's Morris	
	25. Fox and Geese	
	26. Japanese Gomoku	

It is believed that all benefited from the first year of operation.

Dissemination

A broad public relations program informs the public of this program. News releases via newspapers, radio, and television help to publicize the activities.

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Focus on Children with Underdeveloped Skills

Webster's Dictionary defines innovation as "the introduction of something new" or "something that deviates from established doctrine or practice." While perhaps the second definition is the more appropriate to describe innovation in education, both definitions are inadequate as a basis for this discussion. In essence, innovation in the context of this discussion involves taking a variety of elements, most of which have been used in some form before, and placing them in a pattern in order to solve an educational problem. In this case, the desired educational result was a means to better meet the needs of a substantial segment of the school enrollment whose needs were either not being met in the regular classroom or not being totally met through special programs.

Project FOCUS, a title III program in the Montgomery County, Md., Public Schools, is an attempt to meet the educational needs identified. The project is based upon several assumptions that should be enumerated before more detail about the operation of the project is presented. The first assumption is that it is desirable for a child to remain in his regular classroom even though his educational program may need to be supplemented or modified to meet his particular needs. Second, the assumption is made that the emphasis in dealing with children who have special needs should be on programing to meet these specifically described needs rather than on labeling or categorizing the apparent disability. Third, if the emphasis is to be on the maintenance of the child in his regular school setting, except where a full-time specialized program is clearly needed, then efforts must be made to coordinate the work of any supplemental services with the efforts of the regular classroom teacher. Finally, the assumption is made that a more diagnostic approach, or more properly diagnostic teaching, must be utilized in developing curriculum and methodology for children with special needs.

The following discussion outlines more specifically the educational needs that motivated the development of this project and describes the structure and operation of the project.

The Need

The cornerstone upon which the design of Project FOCUS was constructed was an "Inventory of Student Needs" carried out in 1966-67 as a part of an ESEA title III planning grant. The inventory included "a list of conditions, characteristics, and problem areas affecting learning and behavior of students." In the inventory, teachers were asked to indicate items that represented a problem for a particular child. Further, if the item did represent a problem for a particular child, then the teacher was asked if the child was receiving adequate services to meet this need. In addition, the teacher was asked to indicate those special services, such as speech therapy or counseling, that he thought the child needed. The inventory was applied

on a random basis which resulted in the collection of data on 20 percent of the school population, K–12, which could be generalized to the total pupil population.

The results of the inventory are too extensive to be adequately reported here. However, several general statements can serve to summarize those findings that have particular relevance for Project FOCUS. First, on the basis of teacher judgment, a substantial segment of the school population exhibited needs that were not currently being met. For example, between 20 and 30 percent of the pupils in the early grades were identified by their teachers as having problems in reading, arithmetic, spelling, or written expression. Between 20 and 28 percent of the pupils in early grades were seen as having problems in the areas of "attention span" and "work habits."

Teachers identified remedial instruction in reading, number skills, and communication skills as services that were needed for students, grades 1–6. In terms of evaluation services, K–12, the need for educational evaluation was noted most often. The need for this form of evaluation service ranked second to the need for speech evaluation when applied to grades 1–3.

The "Inventory of Student Needs" yielded extensive data regarding the needs and characteristics of the student population as perceived by teachers. As a result of the planning grant, of which the inventory was a part, 11 recommendations were made to the county Board of Education. The first of these recommendations resulted in the design and ultimate funding of Project FOCUS, the topic of this discussion. That recommendation reads as follows:

> Evaluate and demonstrate the feasibility of school-based identification, diagnostic, and intervention processes to improve the educational performance of children who have deficits in learning, social, emotional, and physical areas; apply these processes without regard to categoric labels; develop a diagnostic teaching team as the core of the diagnostic and intervention procedures.

Project Design

To attempt to accomplish the above objective, a project was designed that contained two major elements. These may be described as school-based diagnostic/prescriptive teaching teams and a centrally-based resource team intended to provide multidisciplinary support to the teaching teams. Both of these elements bear some elaboration here.

The Diagnostic/Prescriptive Teaching Team

The project places in each of the four pilot schools a four member diagnostic/prescriptive teaching team. The team includes a diagnostic teacher, a prescriptive teacher, a diagnostic/prescriptive teacher intern, and a relief teacher. It is important to note that while this teaching team has a relationship to the central project staff, it is basically responsible to the school principal and is considered an integral part of the local school staff.

While in this project the four teachers are viewed as a team, there are some unique role functions in each position. The diagnostic teacher assumes the responsibility for receiving and processing referrals made by classroom teachers. The diagnostic teacher collects all available background data that are pertinent to a child's learning performance. She works with children in the diagnostic classroom in order to specify the child's current level of functioning, including his strengths, needs, and learning style. In this process, she utilizes both formal and informal diagnostic instruments and techniques. The diagnostic teacher calls upon the special services offered by the resource team when appropriate and consults with the regular classroom teacher in terms of the child's current school performance. The diagnostic teacher develops hypotheses regarding appropriate ways to structure an intervention program for the child. Through diagnostic teaching, she translates these hypotheses into learning tasks. In light of experience gained with a particular child in the diagnostic classroom, the diagnostic teacher works with the prescriptive teacher and/or the classroom teacher in order to develop an appropriate prescriptive program for that child.

The prescriptive teacher works with small groups of children and occasionally individual children for whom a program has been designed. The prescriptive teacher draws upon the results of diagnostic teaching, particularly the hypotheses raised by the diagnostic teacher in terms of a child's learning strengths and needs. The prescriptive teacher continues to construct developmental learning tasks for the child. Analyzing the child's success with these tasks enables the prescriptive teacher to determine next steps and to select appropriate instructional materials.

The prescriptive teacher's role as an implementor of a prescription developed by the diagnostic teacher is too literal an interpretation for this process as it has evolved in this project. The prescriptive teacher is free to, and indeed is required to, modify the program for children in light of experience in the prescriptive classroom. The team concept, of course, allows for a continuous dialogue between the diagnostic and prescriptive teachers in order to bring about appropriate modifications in the prescriptive program

or additional diagnostic teaching if that is indicated. In essence, the distinction between the diagnostic and the prescriptive teachers is more in terms of a division of labor and emphasis rather than a difference in methodology. If the prescriptive teacher is to meet the needs of the children with whom she works, then she must also work in a diagnostic manner.

The diagnostic/prescriptive teacher intern is perhaps a misnomer in terms of the actual role of this person. While the four teachers serving in these positions perhaps do not possess as extensive backgrounds as the diagnostic or prescriptive teachers, they nevertheless are fully qualified and experienced teachers. They have also received some specialized training since joining the project. The intern concept is a valid one in the sense that this position provides the opportunity for further refinement of the skills needed to perform either the diagnostic or prescriptive teacher roles. In this way, provision is also made for replacement in either position as well as for further diffusion of the diagnostic and prescriptive teaching model.

In actual operation, the interns have performed both of the teaching roles as outlined in this project. They have worked with some children in a diagnostic capacity while working with others in the prescriptive classroom. The position, when viewed in the context of a teaching team, provides flexibility to respond to the needs of a particular school. For example, at the outset of the project the intern worked primarily in a diagnostic capacity in order to assist in the disposition of the large initial referral load. As the project has progressed, the emphasis has been more on working prescriptively with children for whom intervention has been deemed necessary.

Relief Teacher

One of the basic premises of the project is that meaningful interventions can only take place if the classroom teacher is intimately involved. The placement of a relief teacher in each of the project schools is a tangible reflection of that belief. The relief teacher is a regularly certified teacher who can relieve the classroom teacher of her instructional responsibilities so that the classroom teacher can observe instruction in the diagnostic or prescriptive classroom, consult with the diagnostic or prescriptive teacher concerning children in her classroom who are receiving intervention, or work with these children herself in the diagnostic or prescriptive classroom. As the regular classroom teacher is able to know firsthand what is occurring with her students in the FOCUS program, she is better able to integrate this instructional activity with the work in her regular classroom, thereby extending what she has learned to other children having similar problems.

The original design of the project centered on an intervention model in which children whose skills were deficient would come to the diagnostic or prescriptive classrooms in order to receive help. In addition to what might be viewed as this basic intervention model, at least two other related intervention models have emerged as a result of the first year's experience. Neither of these models involves children coming to the diagnostic or prescriptive classroom on a long term or regular basis.

The first model might be described as the "consultation to the classroom teacher model." There are a number of children who because of the relatively minor nature of their problems need not be scheduled in the diagnostic or prescriptive classroom on a regular basis. However, many of these children do need modifications in their regular classroom programs if they are to perform more effectively. Such children can spend a relatively short period of time in diagnostic teaching and then return to full time in the regular classroom. The diagnostic teacher can continue to consult with the classroom teacher regarding appropriate materials and methods to use and can provide other followup services as needed. In this manner, the classroom teacher receives the support of the diagnostic teacher while she adapts aspects of the regular classroom program to meet specific pupil needs.

The second alternate model of intervention involves members of the diagnostic/prescriptive teaching team working with children in the regular classroom rather than in the diagnostic or prescriptive classroom. This has proven to be particularly appropriate when the goal is to provide a suitable program for several children in the same classroom who seem to have similar needs. In such a situation, the prescriptive or diagnostic teacher can go into the classroom to initiate a program with these children, the responsibility for which can be assumed later by the classroom teacher. Consultation and followup as previously described can continue to be supplied by the diagnostic or prescriptive teacher.

Both of these alternate models have at least two advantages over removal of the child from his regular classroom in order for him to receive help in the diagnostic or prescriptive classroom. First, both of these arrangements place the FOCUS teacher and the regular classroom teacher on more of a partnership basis. This appears to be much more desirable than any arrangement which takes away from the classroom teacher the ultimate responsibility for the child's

instructional program. Second, the child's needs are being met in the regular classroom, not in specialized diagnostic or prescriptive classrooms. This is an important factor to consider in light of the need to help regular classroom teachers become more effective in meeting the special needs of children. In addition, it is a test of whether the recommended approach can be feasibly carried out in the classroom.

It should be pointed out here that the intervention models described above are used in combination as well as singly with any child or group of children. In reality, one of the strengths of the program is the flexibility that is possible in terms of intervening with children. Concentrated help in a specialized setting, consultative or resource assistance to the classroom teacher, assistance in meeting special learning needs in the regular classroom or any combination of these are possible with a program and staffing pattern of this nature. Support through resource staff services further enhances this process.

It is appropriate here to provide some general background information on the diagnostic and prescriptive teachers in the project. While a few of these teachers have served in some form of special education, the majority of the teachers in these positions have done most of their teaching in the regular elementary classroom. All of the teachers were selected on the basis of their excellence as classroom teachers.

Although general teaching competency was the determining factor in the selection process, it was recognized that in order to carry out the diagnostic and prescriptive teaching roles, the teachers selected would need additional training of a specialized nature. To accomplish this goal, an institute for the diagnostic and prescriptive teachers was arranged with the Department of Special Education, University of Maryland. The institute, which was 51 days in length, represented a full-time assignment for these teachers. The institute enabled the teachers to become familiar with various diagnostic instruments and their interpretation, while also becoming familiar with instructional methods and instructional materials and their use in a diagnostic or prescriptive setting. Followup seminars on a weekly and later biweekly basis were arranged to provide further training and background for the teaching teams. For these seminars, the project drew not only on the skills of project resource personnel but also incorporated outside consultant services into this inservice program.

The Resource Staff

As indicated earlier, the four teaching teams are supported by a centrally based resource staff. The major portion of the resource staff is composed of a child development team that includes the usual pupil services positions of psychologist and case worker. The child development team also includes a public health nurse, a pediatrician (half time) and a speech and language specialist. The work of the child development team is coordinated by a child development team supervisor.

In addition to the traditional role of performing individual evaluations, the psychologist has been working with project children and teachers to explore how unproductive behaviors in the classroom can be modified through individually constructed schedules of behavior reinforcement. Similarly, the case coordinator, besides having the case management function, is also working with parents individually and in groups to help them find better and more satisfying ways of working with their children. The addition of the medical component to the team has established a new and close relationship between the physician, nurse, and educator, as well as the parent. Child rearing information, for example, as part of the physician's evaluation, is becoming part of the process of dealing helpfully with inschool behavior by increasing parental understanding of their children's physical needs and better handling of the child's home regime. The child development team is also a resource for reaching out into the community for additional services when needed.

While the child development team provides the teaching teams with support in several areas, two other members of the resource staff provide direct instructional support. These are the program specialist and the instructional materials specialist. In large measure, the effectiveness of the intervention undertaken is dependent upon the degree to which method and materials can be adapted to meet the needs of the students in diagnostic and prescriptive teaching. These two resource positions are designed to help the teaching team combine appropriate methods with suitable materials to produce the best possible learning situation for the children receiving intervention. A graphic artist works closely with the instructional materials specialist in designing materials that will fit the unique instructional needs of individual children or groups of children with similar instructional needs.

The brief foregoing discussion provides a general picture of the two major components of the project, that is, a school based teaching team and a centrally based, multidisciplinary resource team. Two other aspects of the project design require some discussion

here in order to provide a more complete picture of the nature of the project. These include the effort to develop a set of feasible screening procedures for the school system and the bimonthly staffings that are held in each of the project schools.

Screening

The Montgomery County, Md., Public Schools, of which Project FOCUS is a part, induct over 10,000 new kindergarten children each year. It has long been recognized that it is most desirable to identify early in their school lives children who may have or can be predicted to have learning and related problems. A major objective of the project has been the development of a screening package that would achieve such a purpose. At the outset of the project, in order to identify the population needing intervention, a pilot set of screening procedures was developed and implemented in two of the project schools. This effort preceded any intervention in these schools. The procedures dealt with the areas of health, including vision and hearing, language development and speech, gross motor ability and fine muscle coordination, school readiness or academic achievement, and social/emotional adjustment. In addition, the teacher's judgment concerning the existence of learning problems was tapped by devising a checklist on which the teacher indicated problems in this area for each child in her class. This first screening was carried out at grades K–3.

Original project plans called for a second screening operation to be undertaken some time during the first half of the 1968–69 school year. These plans were modified to the extent that it was decided to screen only at the prekindergarten and kindergarten levels. As a result, health, speech, and language screening were incorporated into the regular procedures that are carried out in the spring registration of kindergarten children. This screening served to identify many children whose health or speech problems needed attention prior to their entrance into kindergarten. In the resulting followup, resources already existing in summer programs of the school system and in services of community agencies were utilized. Additional screening procedures of an educational nature are planned for this fall when these children will be in kindergarten. This aspect of the screening activity was delayed in order to avoid false positives in identification because many problems, apparent at the time of registration for kindergarten, had been overcome or significantly reduced in the developmental process by the following fall.

Staffing

If the resource staff is to provide the desired support for the teaching teams as they work with children, then the efforts of these two basic components need to be well coordinated. A weekly, later biweekly, staff conference involving indepth discussion of individual children was included in the project design to build in this coordination. These "staffings," planned by the case coordinator, principal, and the diagnostic teacher, provide for continuous followup and coordination of the services provided for the children in project intervention. In addition, staffing provides the channel for the continuous referral and review of other children who appear to need project services. Those persons who have a real need to be involved in the planning and discussion that deals with particular children are consistently involved in the staffing. In essence, those who can contribute something and those who will take from the staffing some form of followup activity are included. For example, the psychologist may report on her evaluation of a child being discussed in staffing, or the project physician may report medical findings. The classroom teacher is included in staffings. In addition, representatives from community agencies who are involved with children receiving project services are asked to participate. The core of the staffing group is made up of the case coordinator, public health nurse, child development team supervisor, diagnostic teacher, and the principal of the project school, who acts as chairman.

In summary, the bimonthly staffing provides the structure under which a multidisciplinary team meets regularly to evaluate the effectiveness of the learning situation for individual children, makes recommendations for services needed to support the educational plan for the child, and implements, coordinates and follows up on the recommended services.

Evaluation

As in other ESEA title III projects, an evaluative component is an integral part of the project design. The basic objective of the evaluative effort is to determine if children in the project schools receiving FOCUS interventions perform better than similar children in the project comparison schools in which these forms of interventions are not available. Group ability and achievement tests have been administered in the four FOCUS and two comparison schools. These data constitute baseline information regarding the enrollments of these schools, K–5. End of project testing using similar measures is also planned. In

addition, plans are being formulated within the school to follow the project and comparison populations for up to 3 years beyond the life of the project.

In addition to the baseline data collection, a considerable amount of pupil data has been compiled through the procedures administered to grades K–3 at the start of the project and through the pre–K screening administered in the spring of 1969. Another prekindergarten screening is planned for spring 1970. These data which pertain to the areas of health, speech and language development, perceptual motor functioning, and a measure of educational readiness are being analyzed both to refine the screening procedure and to provide a base for further study and followup on this population.

Conclusion

Title III projects are funded on the basis of the premise that appears inherent in the proposal. They are proven in the real world of schools, children, and teachers. While more formal evaluative results of the project will not be available until later, in the view of the staff at least, one subjective conclusion can be drawn at this time. The project was predicated on the belief that children who exhibited many kinds of learning problems could be accommodated in such a program. A teaching load consonant with this belief has been taken in each of the four schools. While a few children included in diagnostic or prescriptive teaching were found to need a still more specialized program and were then referred for special education placement, the majority of children can be programed successfully.

At the outset of this discussion, innovation was described as the placing together of several elements in order to better meet an educational need. Staffing, diagnostic/prescriptive teaching, resource staff services, screening, and early identification procedures are not exclusive to this project. Project FOCUS attempts to put together these elements in a manner that will enable the school system to meet the needs of many students in a more effective way.

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PROJECT HELPING HAND: Innovative Special Education Service Center for a Rural Area

Mary had a little lamb. Its presence caused problems in the classroom, so the teacher threw it out. Other problems are not that easily solved, especially the ones dealing with learning difficulty. If Johnny cannot hear, if Ken cannot keep up with the rest of the students, if Sally cannot speak clearly until the teacher is ready to climb the wall in frustration—well, they obviously cannot be tossed out. What to do? What to do?

Since July 1, 1968, teachers in 10 southwestern Virginia school divisions have been receiving a helping hand with their students who need extra understanding and assistance through Project Helping Hand—a federally funded Special Education Service Center. This Service Center exists to aid teachers in educating handicapped learners to the best of their ability. Handicapped, to the Project Helping Hand staff, stands for more than physically disabled. It also covers speech and hearing disorders, behavior problems, mental retardation, and emotional disturbances.

Project Helping Hand works through a four-part team—a caseworker, to coordinate between home, school, and Project Helping Hand; a speech and hearing specialist for audiometric evaluations and speech articulatory examinations; a psychometric examiner or psychologist for psychological evaluations; and an educational consultant to provide followup to the teacher.

Suppose a parent, teacher, or some other professional person, such as a physician, suspects that a child needs assistance. A referral form (available in each of the 96 schools in the Helping Hand area) is filled out, listing the nature of the difficulty, i.e., learning, speech, behavior. When the referral reaches the Project Helping Hand office it is listed as to the type of problem and is assigned to an examiner or to several examiners. These examiners perform the diagnostic evaluations at the student's school, using a mobile diagnostic vehicle designed and built specifically for us.

Upon completion of all diagnostic evaluations for the student, a summary of the findings and some recommendations are mailed to the student's school. Soon afterward, an educational consultant from the project staff visits the school to discuss the findings and recommendations with the principal and teacher. These educational consultants also offer suggestions for specific teaching-learning activities within the class.

Included in the overall concept of this program is an instructional materials center. We attempt to maintain a comprehensive selection of instructional materials. Any classroom teacher in the Project Helping Hand area may borrow these instructional materials for actual classroom usage. The purpose of this instructional materials center is two-fold. Through it we can introduce the classroom teacher to new instructional materials and explain how to use them effectively. Second, through using these materials, the classroom

teacher may be able to requisition through her own school channels some of the more desirable instructional materials, thereby spending local school instructional money more wisely.

We attempt to help each child as much as possible within our own staff resources. However, there are occasions when we have to recommend other services both for diagnostic and therapeutic purposes.

There are 10 school divisions cooperating in this project; only one can be the applicant agency, however. Consequently, it would be easy for the other nine divisions to feel that they have no part in the control and responsibility. To overcome this a 20-member Board of Control for Project Helping Hand, 10 voting and 10 *ex officio,* has been established. One member from each local board of education is also appointed to the Board of Control for Project Helping Hand. These compose the voting members. The 10 superintendents are ex officio members. This board meets periodically to plan new activities and to discuss current and previous ones.

It is the universal desire that schools be able to help each child learn to his optimal ability. In order to do this schools need trained diagnostic evaluators as well as trained classroom teachers in all areas of learning problems. This is neither financially practical nor possible in many rural or sparsely populated regions. These 10 school divisions are proving that these needed educational services can be provided on a cooperative basis.

Bhola's definition of the term "innovation" is perhaps the most appropriate one to use in a discussion of southwest Virginia's Project Helping Hand: "An innovation is a concept, an attitude, a tool with accompanying skills, or two or more of these together introduced to an individual, group, institution, or culture that had not functionally incorporated it before."

Considering the scope of this definition, almost all components and activities of Helping Hand introduced into the 10 rural project school divisions during the planning period and 1-year operational period are innovative; i.e., these school districts "had not functionally incorporated it before."

The purpose of PACE programs has been defined as the diffusion of effective innovative practices and their application to comparable educational situations. Rogers' classification of the five stages of diffusion is applicable to the evolvement and development of Helping Hand in southwest Virginia:

1. Awareness: The individual learns of the existence of the innovation.
2. Interest: The individual seeks more information and considers the merits of the innovation.
3. Evaluation: The individual makes a mental application of the innovation and weighs its merit for his particular situation.
4. Trial: The individual applies the innovation on a small scale.
5. Adoption: The individual accepts the innovation for continued use on the basis of a previous trial.

Aware that services for handicapped children were virtually nonexistent in their area, school officials in southwest Virginia became *interested* in hopeful developments in rural special education, *evaluated* merits of various programs for their particular situations, conducted a 1-year *trial* on a small scale, and are now convinced of the need for *adoption* of certain innovations for continued use on the basis of the trial.

But why were the 4,406 handicapped children (using USOE estimate that 10.7 are handicapped) enrolled in 10 school systems of the Project area in 1968 being neglected? Why were few diagnostic, supportive therapeutic, and specialized educational services provided? Only a cursory look at basic demographic data is required to answer the question.

The Project divisions (Bland, Carroll, Floyd, Galax, Giles, Grayson, Montgomery, Pulaski, Radford, and Wythe) reflect most of the current problems of poor, rural America. Less than four percent of Virginia's school age children are scattered throughout the 3,200 square mile Project area comprising eight percent of the total area of the State of Virginia. The high cost of delivering special education services, well-known even to urban school administrators, literally spirals in such a geographic setting as southwest Virginia. The problem is even further compounded by the mountainous terrain of the area, creating almost insurmountable pupil transportation barriers. Stated simply, the problem has been the provision of adequate services to over 4,400 handicapped children scattered over 3,200 square miles of rugged topography.

The economic situation and outlook in the area presented an equally discouraging view to those school administrators who were resolved to make a beginning in the provision of educational opportunities to their exceptional children. They knew that 44 percent of their families existed on incomes under $3,000 per year compared to 28 percent for the State of Virginia. Further, they knew that 58 percent of project area families lived in substandard housing compared to 34 percent for the entire State. They knew that the median family income in every Project county was much lower than the modest median of $4,964 for the State of Virginia, and was as low as $2,594 in one county. They knew that they spent $29 less on each child in 1964 in their most adequately financed school

system than the State average per pupil expenditure. In their least affluent school district they spent $128 less per child than the State average.

In addition to the geographical and economic problems just described, there existed a serious shortage of community and professional resources necessary to a comprehensive program of services to the handicapped. When this program began, there were only six special classes for the mentally retarded; now there are 21 in the Project area. Only Radford College in the Project area offered undergraduate courses in Special Education and no program was available at the graduate level. Available course offerings were limited to the area of mental retardation and the mentally retarded comprise only 2 percent of the pupil population. No teachers or specialists were being trained to educate 80.7 percent of the exceptional pupil population. Only one diagnostic facility, the Mountain Empire Guidance Center, was providing service to the 10 school division area. This clinic is part of the State Mental Health Service.

Awareness of the magnitude of these problems was created among representatives of all schools and agencies concerned with services to the handicapped during the planning phase of Project Helping Hand. In spite of the seemingly intractable nature of the problems, there was unanimous agreement that a start had to be made. There was consensus that the pressing needs of exceptional children in southwest Virginia had to be recognized and a long-range program mounted to give them a reasonable opportunity to develop their skills and abilities. An application for a PACE operational grant was accepted in June 1968, and Project Helping Hand began operation immediately.

At the time of this delivery, Helping Hand has served southwest Virginia for 14 months. The original objectives continue to shape the direction of Project activities. Experience has resulted in only minor modifications of the original objectives. These modifications were necessitated by the stern realities outlined earlier in this description of Project activities. Observation of comparable projects—even some in urban areas where resources are more adequate—indicates that the attainment of national excellence in the education of the exceptional child will take decades of purposeful and costly effort. Nevertheless, the relatively successful innovations of Helping Hand are heartening. It has been demonstrated that innovation is not the intellectual or professional titillation of a new idea; it can be a redrawn force field, a reshaped grouping of interaction in a broad community, a reconstituted support, evaluation, and supervisory system.

Possibly the most impressive innovation has been the successful utilization of regular classroom teachers in the education of the handicapped. Necessity was, of course, the mother of this invention in southwest Virginia. Highly trained and certified specialists in all areas simply were not available. Urban projects report the same experience in personnel procurement. The gratifying aspects of the experiment has been the response of regular classroom teachers to the thrust of responsibility. Following the diagnosis of a referred child, they have worked closely, cooperatively, and creatively with Helping Hand specialists. Their warm acceptance and support of the Project is in sharp contrast to experiences in some similar programs where a group of specialists came in to tell them how to do the job or attempted to do the job for them.

Special educators in increasing numbers are acknowledging that the trend of the past two decades has been to separate the exceptional children from their "normal" peers. But no longer is it automatically assumed that it is best to insulate them from the world of normalcy in which they must eventually learn to operate. There is a growing feeling that isolating them from normal children may in many cases be more damaging than efficacious. There is recognition of the need for more and better specialists but Helping Hand's experience encourages a new emphasis on developing the regular classroom teacher's understanding and skill to work with the handicapped child. Seizing this as the only practical way to improve the quality of education for the exceptional child in southwest Virginia, Helping Hand has offered workshops, seminars, bulletins, newsletters, materials lists, curriculum guides, and other forms of inservice training to teachers in the project area. Their participation has been positive and productive.

Teachers cannot be manipulated into insight, into mastery, or into wisdom save at great cost both to the manipulator and to the manipulated. And when such insight is achieved, it is likely to be infused with bitterness, resentment, or other qualities so negative that the cost to the program for such a manipulative approach must be reckoned as too great. Consequently, we have rejected the scholastic inspection and scientific supervision models in relating to teachers. Under these approaches supervisors are viewed as the only experts in instruction and teachers are closely directed and required to perform tasks as decided by the administration. We have emphasized creative supervision with the teachers as key persons and agents of change, assisting them to improve the instructional program by their decisions on instructional variables. In an area of education which has overstressed the role of the specialist, this is an innovative avenue—but an avenue

that will be well-traveled in the future if we are to effect classroom changes in the education of the handicapped.

The fact that teachers have related meaningfully to Helping Hand is revealed in the number of referrals for service during the first full school year of operation. If U.S. Office of Education estimates of exceptionality are valid there are 4,406 handicapped children in the 96 schools of the Project area. Within the past school year 2,585 children were referred for diagnosis.

Diagnosis was necessarily the first year emphasis. Except for diagnoses by the Mountain Empire Guidance Center, any reputable psychologist or special educator would have been forced to conclude that children had been placed in special classes without an adequate total evaluation. In some known cases, this resulted in the misplacement and miseducation of children. The team approach to diagnostic evaluation was a needed innovation in the Project area. During the 1968–69 school year the staff administered 2,598 intelligence and achievement tests; 1,084 speech articulation screenings, 49 audiometric evaluations, and 45 near point vision checks. In addition, 19,996 audiometric evaluations were administered by the Virginia Hearing and Speech Foundation. These services were obtained through our efforts.

When the regular school session ended in June 1969, our staff continued to work; this time our efforts were focused on the Head Start and preschool children, who would be entering the first grade in September 1969, as well as on the children in regular summer school programs. During these summer programs we administered 251 intelligence and achievement tests, 1,373 speech articulation screenings, 1,055 audiometric evaluations, and provided individual speech therapy for 96 students.

It is clear from these data that a number of instruments were administered to some children by several specialists in an effort to pinpoint learning deficiencies and barriers. This represents significant improvement over former operational procedures in the area.

It should be reiterated that these diagnostic services and the consultative assistance provided to classroom teachers subsequent to diagnosis could not have been provided in the Project area without a regional administrative structure. The geographical, economic, and other demographic factors cited earlier precluded any one school system from providing the needed services. In southwest Virginia and comparable rural areas it is necessary to bring together in one facility professional persons with regional responsibilities for the administration and supervision of special education programs, as well as those who diagnose and educate the handicapped. The real innovation is not in the establishment of a central center but in the development of an effective liaison and outreach services to assure continuous contact and coordination between the central center and those responsible for providing services to exceptional children in remote rural areas. The true innovation is making it work.

A board of control was organized to chart a program of services for exceptional children, to facilitate intercommunication between agencies, and to obtain interagency agreements. It has been their regional perspective, good judgment, and cooperation with the project staff that have made the innovative structure operate so effectively.

The regional materials center has been a significant innovation. This development has made it possible to implement educational change as the need has been indicated by research and new knowledge. No single school system in the area could have afforded the high cost of staffing, purchasing, and disseminating the materials.

The proper utilization of materials and equipment from the central center has been demonstrated in workshops throughout the Helping Hand area. A catalog of available materials was prepared and distributed to every school. A manual explaining current concepts and techniques for instructing exceptional children was prepared and provided to each school. The response of teachers has literally been overwhelming—over 1,800 requests for material in the first school year. This innovation, too, would only be feasible for rural school systems when organized on a regional basis.

Two innovations proposed in the original contract have not been meaningfully realized: (1) to create an educational programing team which can translate diagnoses into individualized educational programs, and (2) to develop cooperative agreements with area colleges and universities for the recruitment and upgrading of professional staff.

Actually, no expert in the field of special education has claimed to know all the professional skills required on an educational programing team. It is evident that no single person could have all the training and insight required to program for all types of exceptional children. If such a person existed today, he would be unable to keep up with new concepts, research, and materials in all areas of exceptionality and his usefulness would diminish daily. George Peabody College for Teachers is attempting to train a limited number of "developmental specialists" who will be able to communicate with the various disciplines in the field of special education. But these persons can-

not be "one man educational programers." Our alternative is to continue the heavy emphasis upon training and utilizing regular classroom teachers. Our successful experience in using them as creative agents of change would dictate that their role in any programing team of the future would have to be more dynamic and comprehensive than that originally proposed in the PACE application. However, we perceive the concept of an educational programing team as a hopeful one and fully intend to refine our organization in this area when more specialists can be recruited to the staff.

Area colleges face a real dilemma in expanding their special education offerings. They, too, are hard-pressed for competent personnel. Their salary structures place them at a disadvantage in competing for the few doctoral graduates in special education, psychology, social work, counseling, and related areas. But long-range planning with all area colleges will continue in an effort to correct the critical personnel need in the Helping Hand area. Again, our alternative will be the upgrading of regular classroom teachers through inservice activities and continued consultation. From our experience, this is a happy alternative.

As director of Project Helping Hand, I'm sure I can speak for the entire staff, the principals, teachers, and agency representatives of the entire area, in saying it has been an exciting experience to be a part of a "Project to Advance Creativity in Education." We hope we are serving a "lighthouse" district in which, through open system, dynamic and hopeful changes are evolving. Hopefully, this kind of open system will become the model for the future of American education.

LEE NELL GANN
Project Director
Abilene Public Schools
Abilene, Tex.

INNOVATION: Project TOLD

The philosophy of the Abilene, Tex., Public Schools is to provide an educational program to meet the individual needs of students. Because of this philosophy, Project TOLD (Tutors of Language Disorder) was initiated.

Project TOLD is an innovative program designed and operated under title III, Public Law 89–10. Its primary purpose is to provide tutoring for students diagnosed as having a language disorder. Junior- and senior-year students from the local colleges are employed as tutors.

In recent years there has been a growing awareness among educators, psychologists, pediatricians, and neurologists that there is a distinct syndrome frequently associated with children who are intelligent, yet underachievers. This syndrome has been characterized under such headings as "hyperkinetic disorders," "dyslexia," "learning disabilities," "language disorders," and many others. These children are thought by many specialists to have some dysfunction of the central nervous system which has interfered with their ability to receive or retain and reproduce visual, auditory, or motor stimuli as well as inducing a behavior syndrome. These children can often be identified in that they have a short attention span, are hyperactive, are easily distracted, and are readily overwhelmed by anything new or different.

Language disability is not new. For many years physicians and teachers have been concerned about children of normal intelligence who were unable to learn to read. Since early in the 20th century physicians have described the disability. More recently educators have experimented with various teaching methods in an effort to teach the learning disabled child more effectively. Johnson, Myklebust, Kephart, Frostig, and others have published books describing and demonstrating teaching methods for this group of children.

In her book, *Remedial Techniques in Basic Subjects,* Grace Fernald demonstrated that the most extreme cases of reading disability could be remedied. Dr. Fernald has taught nonreaders of average intelligence to read by using individualized methods. Most students learned to read in a few months and in the most extreme cases in 2 years.

More recently, Anna Gillingham published studies demonstrating a method of teaching the nonreader. The individualized multisensory technique has proved successful in teaching students who have previously been unable to read.

As research has proceeded, those experienced in dealing with children have concluded that a gap does exist in the learning opportunities provided children experiencing a language disorder. It has been estimated that 1 percent of the school population experiences language difficulties which can be traced and demonstrated to be a result of a minimal brain injury. Some researchers have concluded that as high as 20 percent of the school population may experience language disorders in varying degrees although it may not be traced to a specific brain injury.

Abilene, population approximately 110,000, is an unusual city in western Texas which can claim three senior colleges and a school system with new, progressive plans for its students, and a number of private schools contributing to the educational climate of the area. When it became evident that within its school population there was an obvious need to be met for a unique group of children, it was only appropriate

that the Abilene public schools should enter into an exciting innovation like Project TOLD. This group of children had been brought to the attention of administrators because teachers and parents were becoming frustrated due to the students' inability to achieve in school.

The students were given individual psychological evaluations which revealed a score of at least average intelligence. In fact, many of the students were found to be very bright in certain areas.

An educational assessment of each child's abilities was administered. These tests confirmed the fact that many students were underachieving approximately two grade levels in academic subjects such as reading, spelling, or mathematics. Some of the students were having extreme difficulty with handwriting.

A neurological examination revealed inadequate neurological development in relation to a student's chronological age in some instances, but very often no difficulties could be detected.

Upon review of all the evaluations and with parental permission, it could be determined whether or not a tutor might be assigned.

The tutors were junior and senior students from Abilene Christian College, Hardin-Simmons University, and McMurry College. A supervisor was appointed by each college to assist in selection and supervision of the tutors.

The tutors were not all education majors or future teachers. Some of the tutors were studying mathematics, religion, psychology, sociology, and other subject fields. In a study comparing the effectiveness of these tutors, the major of the student was not a significant factor.

Because of the lack of sophistication regarding teaching methods as well as the etiology and effect of language disorders, monthly inservice programs were conducted. A 3-day workshop was held for the tutors at the beginning of the project. These sessions were conducted by the project director and leading authorities in the field of language disabilities.

Project TOLD is surpassing the expectations hoped for in the initial planning of the project. An important aspect of the success of the plan is the advantage of the tutors having to report to the school to teach the language disorder students. This arrangement not only provides extra help for the students while in a public school environment, but also provides the tutors with an opportunity to observe and consult with the students' teachers.

Tutors were encouraged to become acquainted with many different methods of teaching and many kinds of materials. They were encouraged to observe the student in order to determine his style of learning. Utilizing this approach to tutoring language disorder students, tutors often used only the students' textbooks by individualizing materials, workbooks, and worksheets. When called for, other materials such as basic sight vocabulary cards or phonetic drill cards were used. Many of the tutors created materials or charts for their students. Programed reading materials were available for use by the tutors. These materials also provided immediate success for the language disorder student. Audiovisual aids, such as the controlled reader, were made available to the tutors. Many students seemed to respond favorably to any unique device designed to maintain interest. Methods were encouraged which utilized visual, auditory, and kinesthetic techniques.

Typewriting was an exciting experience for the students who had a diagnosis of dysgraphia or difficulty with handwriting. Learning to type not only helped the student a great deal with homework, but also aided in building self-concept. For students having difficulty in math because of the inability to copy problems legibly, learning to use a slide rule proved to be successful.

Children with learning disabilities often experience oral expressive difficulties as well as motoric expressive problems. The tutors helped many of these children by making and using puppets along with other techniques of language development.

In a one-to-one teaching situation even the sixth grader will respond successfully because he does not feel embarrassed when using concrete materials with his tutor to solve math problems.

Someone described individualized instruction as responding to an individual as an individual. Because of this response, many of the students have displayed obvious changes in behavior. Study habits were improved for many of the children. One parent said, "There was one reservation I had from the beginning about this program. I was afraid that the students would become too dependent upon their tutors. In the case of our son, the opposite has been true. His tutors helped him become dependent upon himself." Comments such as this were common among parents.

The college students have displayed outstanding attitudes of enthusiasm and interest. Their creativity and adaptability have been exciting to the most experienced educators.

Project TOLD provides for 100 tutors to teach boys and girls diagnosed as having a language disorder. In a study comparing the progress of these pupils with similar students receiving assistance through the Abilene public schools' special education

language disorder classes, Project TOLD students made approximately the same gain. It must be pointed out, however, that students who were more severely handicapped were assigned to special education classes where specially trained teachers worked with small groups of children while the tutor's approach was a one-to-one situation with the less severely handicapped.

Many of the successes of Project TOLD cannot be measured by standardized tests, but measured only by observation and subjective evaluations of tutors, parents, teachers, and administrators. The child who has a better concept of himself, the boy whose speech problem is less noticeable, the junior high girl who had a "friend" with whom to talk, the ex-tutor who now claims to be a better teacher because of the tutoring experience—all these are not to be measured by a test, but by observation of those who witness change.

Project TOLD is a project which has been successful because of a cooperative spirit among three colleges, private schools and institutions of the community, parents of language disorder students, college tutors, and public school personnel. Project TOLD has stimulated much interest and concern of educators and school administrators who are responsible for planning educational programs for meeting the challenge of today's education.

Webster has defined innovation as "something that deviates from established doctrine or practice." A worthwhile innovation is Project TOLD.

RICHARD P. HENTSCHEL
Janesville, Wis.

Instructional Materials Center for Teaching of Special Education for Handicapped Children

The term "innovation" has in recent years become a commonly accepted, widely used, somewhat loosely defined and occasionally abused portion of the modern day educator's vocabulary. A fact remains, however, in that rather than to be unduly critical, one must be realistically cognizant of the fact that certain types of confusion inevitably evolve as the manifestation of dramatic change and effective impact is evidenced. It is only through change that we can achieve innovation, and little change of any resulting impact has ever been derived from a sequence of activities devoid of problems.

While it is realized that abuse of the term is not common, it is also easy to realize that certain definitions of the term could be so construed as to imply something less than desirable in the context of sound, educational philosophy. I make particular reference to the connotation of novelty, as such might pertain to something unusually fanciful or marked for adornment and thereby somewhat destined to be short lived.

This occasional abuse of the term, caused those who helped draft our original title III proposal to, question whether "innovation" should be considered as descriptive of our proposed project. I find it necessary to point out that this incident took place in 1966 at which time there were fewer operational programs being described as innovative and still fewer that had been operational for periods of sufficient duration to enable reliable study in terms of those aspects purported to be or have been innovative. A certain air of skepticism existed with relevance to some of what we read.

Only after considerable deliberation was agreement reached with respect to allowing "innovation" to serve as a descriptor of what we proposed. The basic premise upon which this decision was made was agreement that application of established techniques to an all too familiar problem would not cease to be innovative because its parts were familiar. This then was the consensus of our personal and professional experiences which served as an original concept of innovation and from which all else has grown.

From the beginning, our concept of innovation had a ring of familiar practicality. The problem of familiarization and effective utilization of the latest in instructional materials was a problem of long-standing; the proposed solution consisted of a sequence of activities, none of which was novel in itself. The overall plan still seemed to derive the characteristics of innovation from the fact that no such scheme, to the best of our information, existed anywhere in the country.

I believe that this type of thinking takes on indepth meaning and greater understanding if we take time

to pause for personal question and reflection.

Examples of several questions that ran through my mind as we became involved in writing the previously mentioned project with respect to its being innovative were:

> Was not Benjamin Franklin's discovery of electricity an innovation utilizing familiar parts toward the solution of harnessing a known or suspected better source of power, and are we not continuing to be more and more innovative as we gain a greater knowledge of the parts, especially in terms of adaptation and exemplification? Secondly, don't chemists continuously contrive innovation by combining in experimental quantities parts with which they are at least somewhat familiar? Here, as in many other areas, we can witness greatness in the growth of innovation through adaptation and exemplification.

Why the introduction and commingling of the terms "exemplary" and "adaptive"? Because, it is my personal conviction that if something is truly worthy of being considered innovative, it must have been premised or in great part based upon certain features that have proven to be of the highest quality and thereby have the definite potential of serving as a model for the educational community. Our educational system cannot tolerate the threat of blind experimentation, much less allow such to be disguised as innovation.

Furthermore, and after assuming that a given project meets the criteria of being both innovative and exemplary, one can gather further insight as to its value and impact by attempting to assess its adaptability. No doubt the extent to which it may be adaptive is dependent upon certain qualities of those persons in receipt of the data; however, some basic potential of this character must exist.

We feel that this project is innovative in that it provides at least one solution to an old problem; it is exemplary in that its features continuously evolve from a consortium of forerunning experiences of the University of Wisconsin's prototype Special Education Instructional Materials Centers; and it is adaptive in that it provides a vitally needed service, tailored to local needs.

In the event that some of the preceding statements are interpreted as being somewhat negative, I offer my apologies. The intentions of such statements were to emphasize a concern for caution in an effective manner which, if exercised, will promote ever increasing advances and accomplishments in the field of education. To be emphasized and reemphasized is the fact that innovation, in and of itself, cannot yield maximum potential if it remains in a vacuum of adaptation and exemplification.

At this point it would seem advisable to make mention of the process of inquiry, not only as it pertains to being an initial step toward the development of an innovation, but also as it pertains to being an initial step toward the development of improvement and modification. Without adequate knowledge of research and evaluation data, it would be virtually impossible to formulate worthwhile ideas and workable theories.

We feel fortunate that we have educationally oriented research personnel assigned to Federal Title Project Staffs at the State Department of Public Instruction level in Wisconsin. The expertise and availability of these persons used to assist local area educators in engineering projects based on applicable theory and research results have had tremendous impact both in the quality and quantity of effective projects throughout the State of Wisconsin.

By working with such researchers and special educators at the State department level, we gain access to intellectual raw material from throughout the State and in some cases across the Nation. Thus, we are able to work toward the invention of improvement by capitalizing on the experiences and thinking of fellow educators who overlap on common concerns.

Whereas the invention process includes the design of an innovation, its refinement, and its feasibility testing, we again have the opportunity to work with people at the State level who assist us in drawing together a variety of experiences from a much broader base. It would be difficult and time consuming to go into further details of cooperative ventures and assistance. However, we wish it known that much of the credit for our success is attributed to the tremendous assistance and working relationships that exist between [redacted] local operation, the Division for Handicapped Children-Wisconsin Department of Public Instruction, and the University of Wisconsin-Department of Behavioral Studies.

The following facts should, at least in part, substantiate the described relationships:

1. Mr. John Melcher, Chief of the Division for Handicapped Children-Wisconsin Department of Public Instruction, accepted the additional responsibility of serving as Director of the University of Wisconsin Special Education Instructional Materials Center (SEIMC) of which we serve as a satellite center.
2. A State advisory SEIMC committee has been organized and is chaired by Mr. Kenneth McMahon who is employed by the Division of Handicapped Children as a media specialist in charge of coordinating the activities of the SEIMC network in Wisconsin.
3. State department research and evaluation teams

have worked with all federally funded units and are open to requests for assistance at any time.

4. The "Bureau Memorandum" which is an official State of Wisconsin Department of Public Instruction publication has featured numerous articles pertaining to the SEIMC operation in our State.

Following the various processes whereby we can gain from the assistance of others in their willingness to relate experiences and provide data, we arrive at the demonstration stage which, of necessity, is the test and true responsibility of the local educational agency. All of our efforts through the development and testing stages culminate and are to be weighed in terms of the working model and the extent to which they can be emulated and adapted. We, then, as local educators have, in addition to adequately meeting our objectives as stated, the responsibility of enabling other educators to examine the feasibility of what we feel to be an innovation, to fully understand the factors affecting its use, and to accurately consider its adaptation to their own unique educational systems. The zeal and enthusiasm with which we promote the dissemination of information relevant to project success and other findings will determine its acceptance and appeal to others in the field. Legally and professionally this is our responsibility and the responsibility of all other grant recipients in the implementation of innovation.

As you will recall in a preceding statement, I mentioned the fact that we felt our initial proposal was innovative because of familiar parts being combined to form a new scheme and attack a familiar problem. I also said that it was from this original concept that all else has grown.

The major purpose of our basic instructional materials center for teachers of special education and handicapped children was to provide an adequate supply of educational materials, books, and equipment that could be loaned to teachers to upgrade the quality of their teaching of children with all known handicaps.

The center soon grew to where it could boast of thousands of pieces of instructional materials which included books, tapes, records, films, film strips, games, transparencies, a wide variety of kits, and audiovisual equipment, all of which were made available on a free loan basis to special education teaching staff, university staff, and students involved in special education.

It took a short time for us to realize that we had far too many clients and materials to operate effectively as a basic center or library. This was particularly apparent as a teacher or therapist with a well-defined need for specialized materials was confronted by four or five equally attractive kits, each of which would take many hours of examination and trial before a decision and actual implementation could be achieved. It was also apparent that many potential clients from outlying areas experienced considerable difficulty in getting to and from the center after regular school hours.

Our solution, which we feel made a significant contribution to the invention and demonstration stages of the innovation process while meeting the needs of our local area, was to coordinate a second project under title VI–A ESEA funding.

After our proposal was approved, we were able to hire an instructional media specialist and provide him with a mobile unit. The addition of this staff member has enabled the SEIMC to assist in local programs by offering direct services to youngsters. Not only is the media specialist available to enter a classroom and demonstrate the uses of various materials in the actual classroom situation, but he has, at his disposal, a well equipped mobile unit that can serve as an on-location demonstration center.

This was the first position of its sort in the State of Wisconsin. It has proven successful and has since been instituted in a number of communities. In our particular situation, the position now exists on local as opposed to title VI–A support; however, such would never have been possible without the initial assistance of Federal funds or the acceptance of an innovative project.

As our instructional media specialist, who is now titled instructional materials teacher, moved about in our area we began to become aware of another need. This time the concern was for youngsters with special learning disabilities for whom there were no programs.

The solution in this case involved the cooperative efforts of 14 school districts and three additional educational agencies. The results of such effort are evidenced in the fact that we will soon be opening the doors to a model facility designed to serve as a special learning disabilities demonstration unit and training center.

This project, designed to establish a comprehensive educational program for the habitation of children demonstrating learning disabilities, involves:

1. Indepth training of two experienced teachers in the specific area of special learning disabilities.
2. Additional training of SEIMC personnel who will serve as resource persons to the developmental and operational aspects of the program.
3. The hiring of part-time consultants.
4. The operation of a model special learning dis-

ability (SLD) facility for students at the H–3 level in connection with the instructional materials center for teachers of special education and handicapped children.

5. The operation of an itinerant program for older youngsters demonstrating special learning disabilities.
6. The opportunity to provide demonstrations, in-service meetings, and workshops, all oriented toward increased awareness on the part of teachers and other professionals concerned with youngsters demonstrating special learning disabilities.

Once again, one innovation led to another, cooperative effort was put forth, local and Federal dollars were put together, and a program emerged. We anticipate that this program will be operating entirely on local support in the near future as have others for which we have had assistance.

Our very latest project, which we feel to be a true innovation, is a unique summer extension program for trainable mentally retarded youngsters. This program is designed to provide work training experiences on the school grounds. A roadside stand is being built which will enable youngsters to sell the products of their effort for profit in a stimulating learning situation. Gardening, animal care, and crafts are but a few of the activity centers that are being established.

Here, as in other cases illustrated, Federal, State and local support are providing us with the opportunity to create an innovation.

Although these brief descriptions of programing are not sufficient to enable one to gain indepth insight, I am hopeful that they will convey the growth we have had as a result of what was in 1967 a single innovative project supported by title III ESEA. It is quite evident to us that, without the SEIMC, our special education teachers would still be without the equipment and materials that have enabled them to make such tremendous gains in their offerings to students.

It is also evident that had the SEIMC not become a reality we would not have an instructional materials teacher to work in our special education classrooms.

Without the assistance of SEIMC personnel, including our instructional materials teacher, we would have neither a model SLD facility within the SEIMC complex nor any other programing for youngsters with special learning disabilities. I say this because it was through the operation of the SEIMC that the need was felt and the proposal was compiled. I do not mean to discredit the many who worked on and supported this proposal but only to convey the fact that the SEIMC played a major role and continues to do so as our instructional materials teacher is assigned to the SLD program on a part-time basis.

The same picture is painted over and over again as witnessed in the summer extension program for trainable mentally retarded youngsters. The idea was fed to the SEIMC, whose efforts were primarily responsible for the reality of present programing.

What then has innovation meant to us? It has meant that at last we are adding sophistication to special education and finding support in breaking with tradition in areas where new ideas, methods, and schemes suggest successful advancement. It has meant that we have had an opportunity to launch programs whose initial costs would have been prohibitive but have been readily assumed after noting operational results. Above all, it has enabled us to upgrade the total effectiveness of special education programs in our area.

This, however, is only the beginning as we see it. We hope to continue in our efforts to help teachers, students, and all other persons concerned with the advancement of programs for special education. By our serving as creative support with financial aid from the local, State, and Federal level, the revolution will continue and innovation will cause handicapped children to attain greater potential.

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Los Angeles, Calif.

THE ENGINEERED CLASSROOM: An Innovative Approach to the Education of Children with Learning Problems

Special education has long been enamored with rich descriptive statements and impressive, if ominous, diagnostic terminology as it has labored to place children with behavioral and learning problems in some sort of educational perspective. In the process the field has borrowed freely from disciplines of psychiatry, medicine, and neurology and has legislated their terms and labels for use in the school. Despite the authoritative ring to such terms as "school phobia," "ego deficiency," "dyslexia," and "minimal cerebral dysfunction," these descriptions of children who are fearful of coming to school, refuse to obey the rules, have difficulty learning to read, and who demonstrate perceptual-motor problems are nonrelevant and almost totally useless in the classroom. In addition, they foster a point of view in reference to the child that suggests he is first a psychiatric or neurological casualty and only secondarily an educational problem.

Recently, a behavioristic point of view has gained attention in the field of special education with children with behavior and learning disorders. It approaches these children in an open-minded manner and suggests that education can indeed "make a difference" in their lives by aiding them in the acquisition of behavior related to success in learning and diminishing the frequency of behavior which interferes with learning. The problem is presented as one of "behavior" not "psyche" or "tissue" and thus comes far closer to the expertise possessed by most teachers. However, there has been a noticeable hue and cry from some special educators who see a shift toward a behavioral orientation as robbing them of some of their glamorous alliances with psychiatry and medicine, stripping their vocabulary of a variety of prestigious labels, and reducing them to the level of learning technicians rather than "educational therapists" or "remedial diagnosticians."

The behavior approach which has been referred to as behavior modification is also charged with being "simpleminded" or "intellectually bankrupt," because it views the child as an organism of the moment whose "now" behavior is of concern rather than consideration of "why." Also the use of systematic, environmental manipulation, involving both stimuli and consequences, seems sterile and nondependent on such valued teaching attributes as artistry and intuition.

In truth, behavior modification is simpleminded. It looks at the basic ingredients of the teaching and learning act and communicates to the teacher the importance of setting terminal goals, analyzing these goals into reasonable task components, rewarding the child when he approaches a goal through some task level accomplishment and nonrewarding him if he fails to take a step, even part-way, which according to everything known about him is fair and reasonable to expect. Behavior modification is also simpleminded in

that it directly focuses on doing something about two lofty notions of special education—individualizing instruction and guaranteeing success. These notions are referred to again and again in the literature, but the specific methodology, the step-by-step design for accomplishing them is greatly neglected. You individualize instruction by maintaining a broad, total picture of what learning is all about in the first place.

Over the past 3 years in a project largely funded by two title III Demonstration Grants, the Santa Monica Schools in California have implemented a point of view with respect to what learning is all about based on a developmental sequence of educational goals (Hewett, 1968). These goals or behavioral categories move from attention, response, order, exploratory, and social to mastery. The implication is that we must gain a child's attention and make contact with him, get him to participate and respond in learning, aid him in adapting to routines and direction following, help him accurately and thoroughly explore his environment through multisensory experiences, learn to gain the approval of others and avoid their disapproval, and finally master academic skills of reading and arithmetic and gain knowledge in curriculum content areas. The child is taken where he is on this developmental sequence, his weaknesses bolstered and his strengths supported. Psychiatric and neurological problems become learning and educational problems, and special educators become teachers rather than junior psychotherapists or pseudoneurologists. This behavioral description is only a first step, and problems certainly still exist with respect to specifically assessing a given child using the developmental sequence and devising curriculums to aid him at one or more work levels. The contribution here is in shift in point of view, rather than a grandiose, final claim that once and for all our problem of description in special education of children with behavior and learning disorders is solved.

Continuing a review of the simpleminded approach of behavior modification to special education, let's take a look at that platitude of platitudes in the field "guarantee the child success." It is obvious that you must start with individualized goals as discussed earlier, but goals without methods leave both teacher and child stranded on the launching pad of learning. One of the realities of learning is that we learn because there is something in it for us. In more direct terms, rewards are important in learning. Most teachers do not have a fondness for focusing on this bit of educational reality. Children learn for the "joy of learning." Learning is its own reward. Thus, when some children refuse to or are unable to learn, scant consideration may be given to "what's in it for them" in the first place.

There are at least three major "somethings" in it for children who come to school and enter the classroom. One something can be called "knowledge of results" and refers to the grades and acknowledgement which is provided and which evaluates the child's performance according to various criteria of excellence. Another has to do with the obtaining of social attention and praise of others, particularly the teacher. The last "something" relied on, but often not recognized, can be referred to as sensory-motor experiences. Children find the classroom environment and the activities exciting to look at, listen to, and touch. They also find the classroom environment to be fundamentally more meaningful.

A fourth class of something recognized as respectable by behavior modification, but often shunned by educators, is tangible rewards. Most children do not need food, trinkets, or candy to motivate them in learning, but some who have continuously failed and been denied the available rewards of good grades, praise and approval, and interesting activities may greatly profit from their presence in the classroom in the initial stages of a special program. Use of such primitive rewards when necessary is both logical and temporary. When a child is unable to manipulate number symbols to solve the problem, 6 + 2, we do not hesitate concretizing the problem with such aids as counters, sticks, or other objects. Six concrete items added to two concrete items equals eight—count them —one, two, three, four, five, six, seven, eight. This logic is applicable to children who find nothing rewarding in classroom learning. Concretize the reward and provide it on a less long-range and abstract level than knowledge of results and you may include rather than exclude many children with learning and behavior problems. Just as the child who resorts to use of concrete items to solve basic number problems soon "gets the idea" and manipulates numbers symbolically, so the child who initially learns for a tangible reward shortly becomes susceptible to more traditional and higher level rewards in learning. The secret is: don't lose the child because of a narrow range of tasks and goals and lack of imagination and flexibility in providing "something in it for him" in learning. Guaranteeing success can become a common classroom occurrence for children with learning and behavior problems if teachers carefully select tasks, increase expectation in thimblesful rather than bucketsful measure, systematically provide meaningful consequences in teaching, and are prepared to back up and reevaluate existing demands at a moment's notice if it appears

the child cannot handle them. Decreasing the probability of "losing the child" through consideration of the above is a major offering of the behavior modification approach to education.

Sounds acceptable, doesn't it? In fact what is implied here is implementation of good, sound teaching practices. The trouble is word has gotten out that the significance of these considerations was first discovered in animal laboratory research, not in the human classroom. That is all it takes to "lose the teacher" in many instances when this approach is being discussed. Secondly, there is an emphasis on efficiency which runs counter to the "cafeteria eclecticism" of many special educators. Teachers are accountable for managing a learning environment including selection of stimuli materials, scheduling of consequences, and maintenance of fair yet predictable and consistent structure. In addition, viewing emphasis on rewards as "bribery," manipulation of environmental variables as "brainwashing" and systematic teaching as "nonhumanistic" have made acceptance of the behavior modification approach difficult by the special education field.

A common term in behavior modification is "shaping." That is, you take an individual exactly where he is and gradually "shape" his behavior toward a particular goal by first assigning him tasks well within his capability and then slowly but systematically increasing task complexity and moving him toward the desired behavioral goal. Special education must be "shaped" into recognizing the essential strengths of the behavior modification approach. The approach must hold promise for increasing the teacher's chances for "making a difference" in the most difficult public school situation and must be translated pragmatically and not presented in the manner of the arrogant experimentalist who disdains application and service. An attempt at introducing behavior modification to special educators by means of such a shaping procedure has been done with an engineered classroom design. This design sets up a classroom environment, schedule, curriculum, and operation consistent with behavior modification principles and the developmental sequence of educational goals mentioned earlier. It has been systematically investigated in the Santa Monica schools for the past four years.

Prior to this time the Santa Monica Unified School District had been concerned about the increasing number of inattentive, failure-prone, hyperactive children who are average, or above average, in intelligence but who could not be contained within the usual classroom structure. Often all appropriate public school techniques had been exhausted and both teachers and administrators were unable to find a suitable solution for these students. Repeated parent conferences, transfers to other classrooms or schools, intervention from outside agencies, suspensions, and home instruction had all been utilized with little or no noticeable effect.

The school district recognized that these students had the potential to achieve in school if some appropriate program could be developed for them. It was obvious that the increasing number of suspensions and the ever greater number of children assigned to home teachers were not effective ways to meet the problem. At the same time it was not feasible to leave the disordered student in the regular classroom. What was needed was in instructional program that would be understandable to a teacher, translatable to the classroom, and have promise for more effectively educating the child who is known as educationally handicapped or emotionally disturbed.

Dr. Alfred A. Artuso, Superintendent, and Dr. Frank D. Taylor, Director of Special Services of the Santa Monica Unified School District, envisioned the engineered classroom design as developed by Dr. Frank M. Hewett, Chairman, Area of Special Education, UCLA, as a possible solution to the problems described earlier. Through their leadership the engineered classroom design, based on behavior modification theory and encompassing a concept of a developmental sequence of educational goals for exceptional children, was investigated at the elementary and junior high school levels in Santa Monica with educationally handicapped children.

This cooperative endeavor between a public school system and a major university has proven very productive. The university provided the creative talent of an expert in learning theory and the knowledge for sound research studies. The public schools provided a resource for personnel in developing classroom procedures and curriculum while providing the opportunity of testing an educational innovation in the reality of the "real world." In the final analysis the value of any educational innovation must not be decided until after it has stood the test of a genuine public school situation.

With these facts in mind, Dr. Hewett, Dr. Artuso, and Dr. Taylor planned to initiate classrooms for educationally handicapped students for the 1966–67 school year. The U.S. Office of Education provided a title III demonstration grant to help support the project.

The result was a carefully planned demonstration of the engineered classroom model in eight classrooms located at five separate schools. These schools operated in a typical urban area; the concerned public

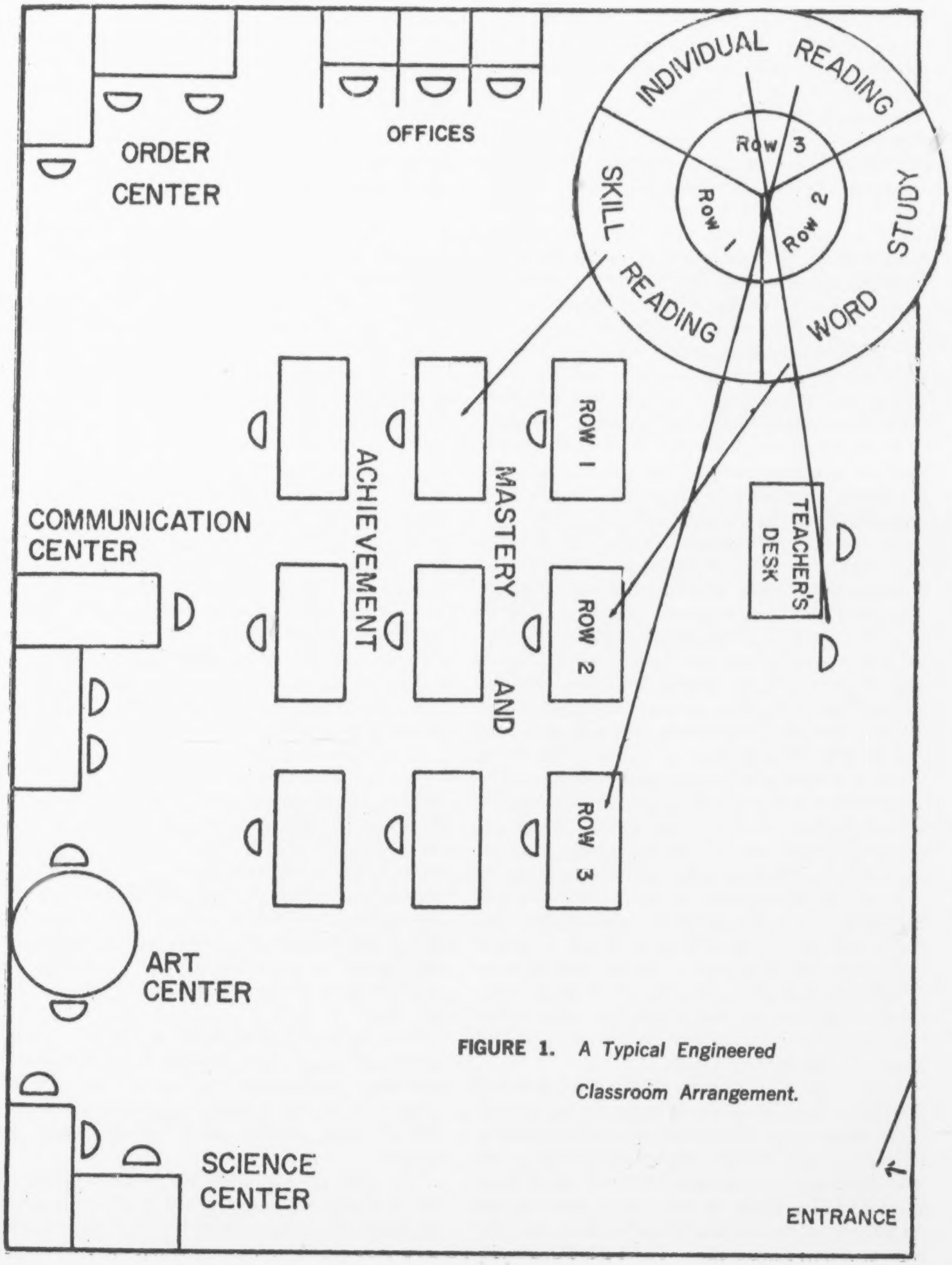


FIGURE 1. *A Typical Engineered Classroom Arrangement.*

school teachers, administrators, P.T.A. organizations, and parents encompassed the full spectrum of the ethnic and socioeconomic backgrounds of an average community.

The classrooms for educationally handicapped students as developed in Santa Monica provide the teacher with a structured plan for assigning appropriate tasks to students, providing meaningful rewards for learning, and for maintaining well defined limits in order to reduce, and hopefully eliminate, the occurrence of maladaptive behavior in school.

The Santa Monica Project, through the engineered classroom model, attempts to translate behavior modification principles and theories—not rigidly, but pragmatically—to a public school setting. Behavior modification principles such as immediate feedback of results, building secondary reinforcement through initial use of primary reinforcement, scheduling of reinforcement, shaping behavior through successive approximation, and focus on observable events are utilized in this design.

The design provides four important elements of structure for the classroom teacher.

A Developmental Sequence of Educational Goals

The developmental sequence postulates six educational task levels—attention, response, order, exploratory, social, and mastery—and describes the educationally handicapped or emotionally disturbed child with respect to deficits at each level. Each level is considered in terms of three ingredients which are thought to be essential in all learning situations—a suitable educational task, provisions for meaningful learner reward, and maintenance of a degree of teacher structure control.

While the ultimate goal of the teacher is to engage the student at the mastery level, children must first be considered in terms of their development at lower levels, and assignments in school must take this into account. In helping an educationally handicapped child get ready for intellectual training, the teacher can profitably use the behavior modification principle of shaping and, rather than hold out for the ultimate goal (e.g., student achievement approximating the intellectual level), foster successive approximations of that goal (e.g., functioning at attention, response, acceptance, order, exploratory, and social levels). The engineered classroom design attempts to do just that.

Classroom Arrangement

The typical engineered class includes a large, well-lighted room with double desks (2′ x 4′) for each of its nine pupils. The class is under the supervision of a a regular teacher and a teacher aide. The aide need not be a credentialed or specifically trained individual. High school graduates and PTA volunteers have been employed.

The physical environment can be described according to four major centers, paralleling levels on the developmental sequence of educational goals. The *Mastery Center* consists of the student desk area where academic assignments are undertaken and study booths or "office" where the student continues his academic progress in another postural setting without visual distraction. An *Exploratory Center* is set up near the windows with facilities for simple science experiments, arts, and crafts. There is a *Communication Center* where social skills are fostered. The *Order Center* consists of tables and a storage cabinet where games, puzzles, exercises and activities emphasizing attention, orderly response, and routine are kept (figure 1).

The Checkmark System

Mounted by the door is a work record card holder, much like a timecard rack near the time clock in a factory. An individual work record card for each student is in the holder. As each student enters the room in the morning he picks up his individual work record card which is ruled with 190 squares. As the student moves through the day the teacher and aide recognize his efficiency to function as a student by giving checkmarks on the work record card. The student carries his card with him wherever he goes in the room. Checkmarks are given on a fixed interval basis with a possible 10 checkmarks available to the child each 15 minutes.

This system attempts to provide rewards on a concrete, immediate basis for children who have not been responsive to the more typical kinds of rewards provided by school (e.g., long-range grades, praise, parental recognition, competition, etc.). The teacher attempts to convey the idea that checkmarks are objective measures of accomplishment and literally part of a reality system in the classroom over which the teacher has little subjective control. Students save

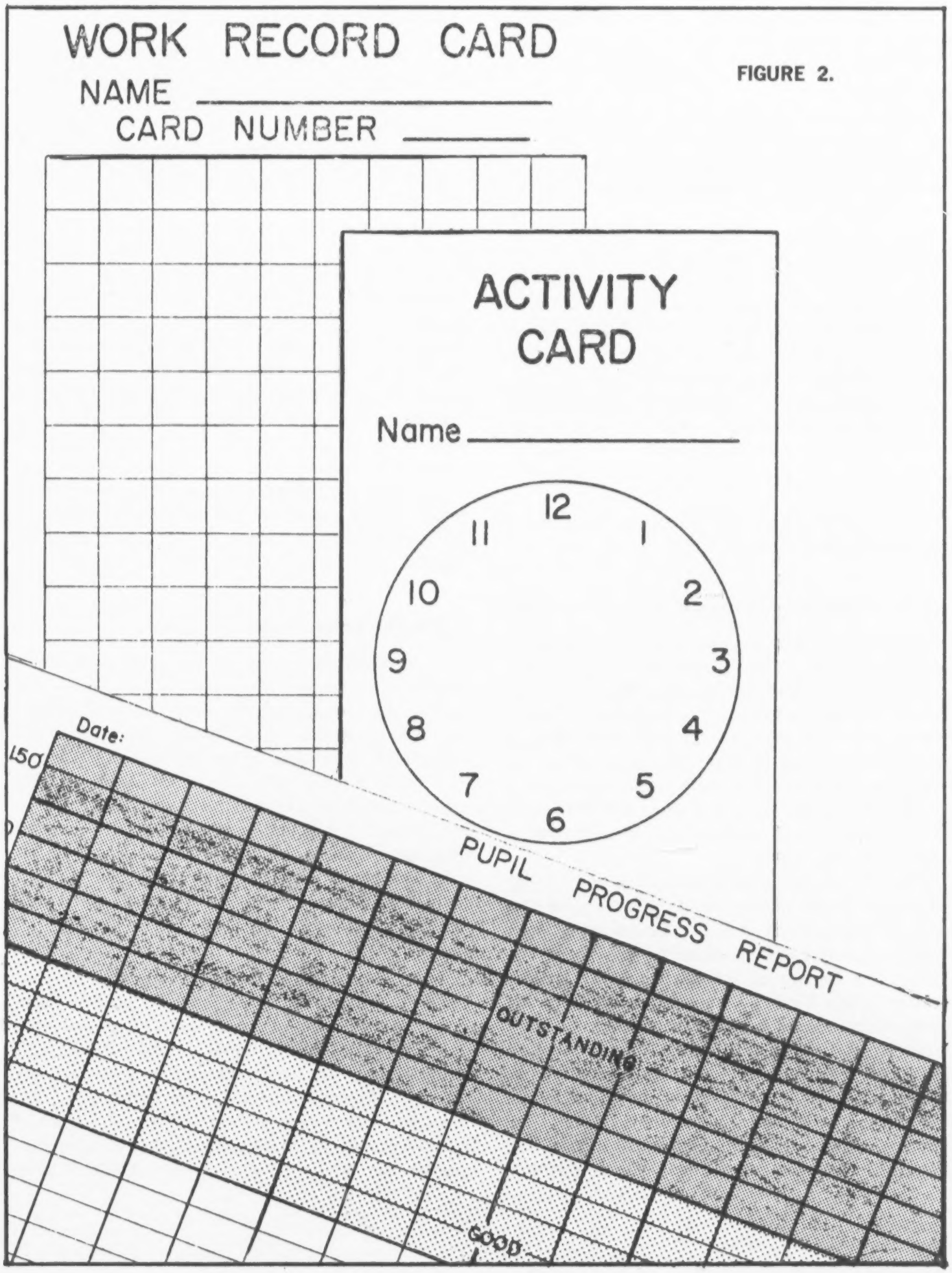

WORK RECORD CARD
NAME
CARD NUMBER
ACTIVITY CARD
Name
12
1
2
3
4
5
6
7
8
9
10
11
Date:
150
PUPIL PROGRESS REPORT
OUTSTANDING
GOOD

FIGURE 2.

completed work record cards that can be exchanged for simple trinkets or candy (Phase I), earned time activity card (Phase II), or a graphic report card (Phase III, figure 2).

Classroom Interventions

Earlier it was suggested that one of the essential ingredients in all learning situations was a suitable educational task—a task that made it possible for each individual student to succeed at all times. Thus, the teacher must be aware of each student's progress throughout the school day and be ready to intervene at any time when a given task assignment proves inappropriate. Eight specific interventions have been developed which encompass the six levels on the developmental sequence of educational goals.

As long as the child is able to stabilize himself during any of the student interventions, he continues to earn checkmarks on a par with those students successfully pursuing mastery level assignments. He is in no way penalized for the shift in assignments made by the teacher.

Each student starts his class day in either reading or written language activity. If, at any time, he begins to display signs of maladaptive learning behavior (e.g., inattention, daydreaming, boredom, disruption) the teacher has appropriate resources in the form of interventions to meet the situation.

The following table summarizes the interventions which may be utilized in an attempt to foster adaptive student functioning. The teacher may select any intervention seen as appropriate with a given student or may try the student at each intervention level until his behavior improves.

HIERARCHY OF INTERVENTIONS TO MAINTAIN STUDENT ROLE

Level	Student interventions
1. Mastery	a. Assign student to study booth to pursure mastery work.
	b. Modify mastery assignment and have student continue at desk or in study booth.
2. Social	Verbally restructure expectation of student role. (e.g., respect working rights of others, accept limits time, space, activity).
3. Exploratory	Remove mastery assignment and reassign to exploratory center for specific science, art, or communication activity.
4. Order	Reassign to order center for specific direction following tasks. (e.g., puzzle, exercise, game, work sheet)

HIERARCHY OF INTERVENTIONS TO MAINTAIN STUDENT ROLE—Continued

Level	Student interventions
5. Response	Remove child from classroom and assign him to a task he likes to do and can do successfully outside. (e.g., running around playground, punching punching bag, turning specific number of somersaults on lawn)
6. Attention	Remove child from classroom, put on a one-to-one tutoring relationship with teacher aide and increase use of extrinsic motivators to obtain cooperation, attention and student behavior.
	Non-student interventions
7. Time Out	Take away work record card and explain to child he cannot earn checkmarks for a specific number of minutes which he must spend in isolation in room adjacent to class.
8. Exclusion	If the child is not able to function in time out room, immediately suspend him from class and, if possible, send him home.

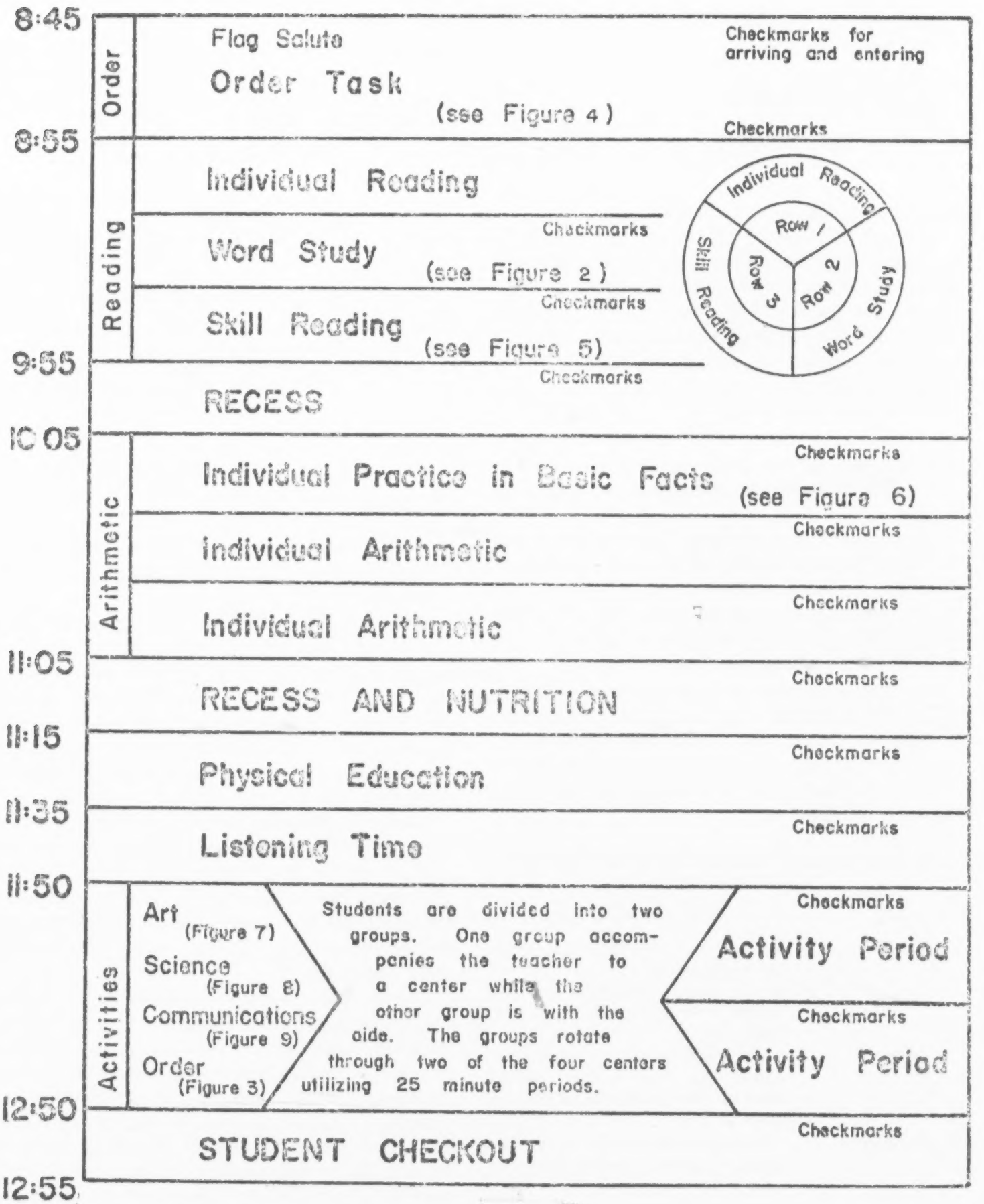
Actual practice has shown that it is only on rare occasions that the teacher needs to employ a time out or exclusion.

The original daily schedule and curriculum of the engineered classroom has been constantly assessed and modified to assure maximum student progress (figure 3). The emphasis is on meeting individual needs and avoiding busywork. The focus is on providing an instructional program that permits the teacher to teach a full day with virtually no disordered behavior from students.

The initial *order period* is designed to provide students with simple paper and pencil or concrete manipulative direction-following tasks stressing control and completion. Commercially available perceptual motor training work sheets are used along with simple tracing, design copying, and visual discrimination tasks (figure 4).

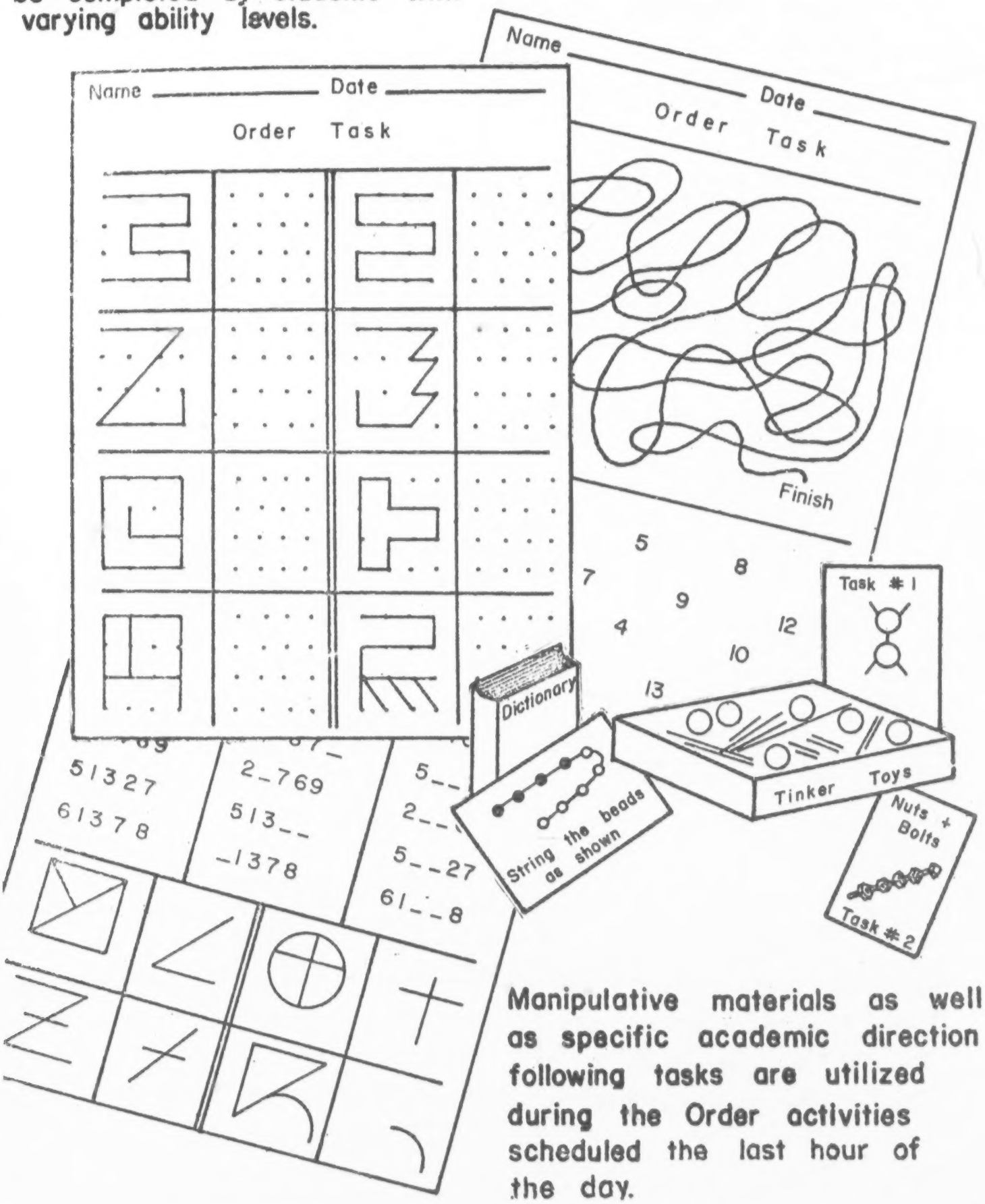
The *reading program* is divided into three 15-minute periods. *Individual reading* is done at the teacher's desk with each child. The child brings his work reader (a basal or remedial text close to his actual functioning level) to the desk and reads aloud with the teacher aide for a 3-minute period. The 3-minutes are timed by a small hourglass which the child turns over when he is ready to start reading. As the child correctly completes each line of reading material, the teacher aide deposits a candy reward in a paper cup. The aide also keeps a record of each word the child mis-

FIGURE 3. *Daily Schedule.*



Simple paper and pencil tasks or concrete manipulative tasks of a direction following nature that can be completed by students with varying ability levels.

FIGURE 4. *Order Tasks.*

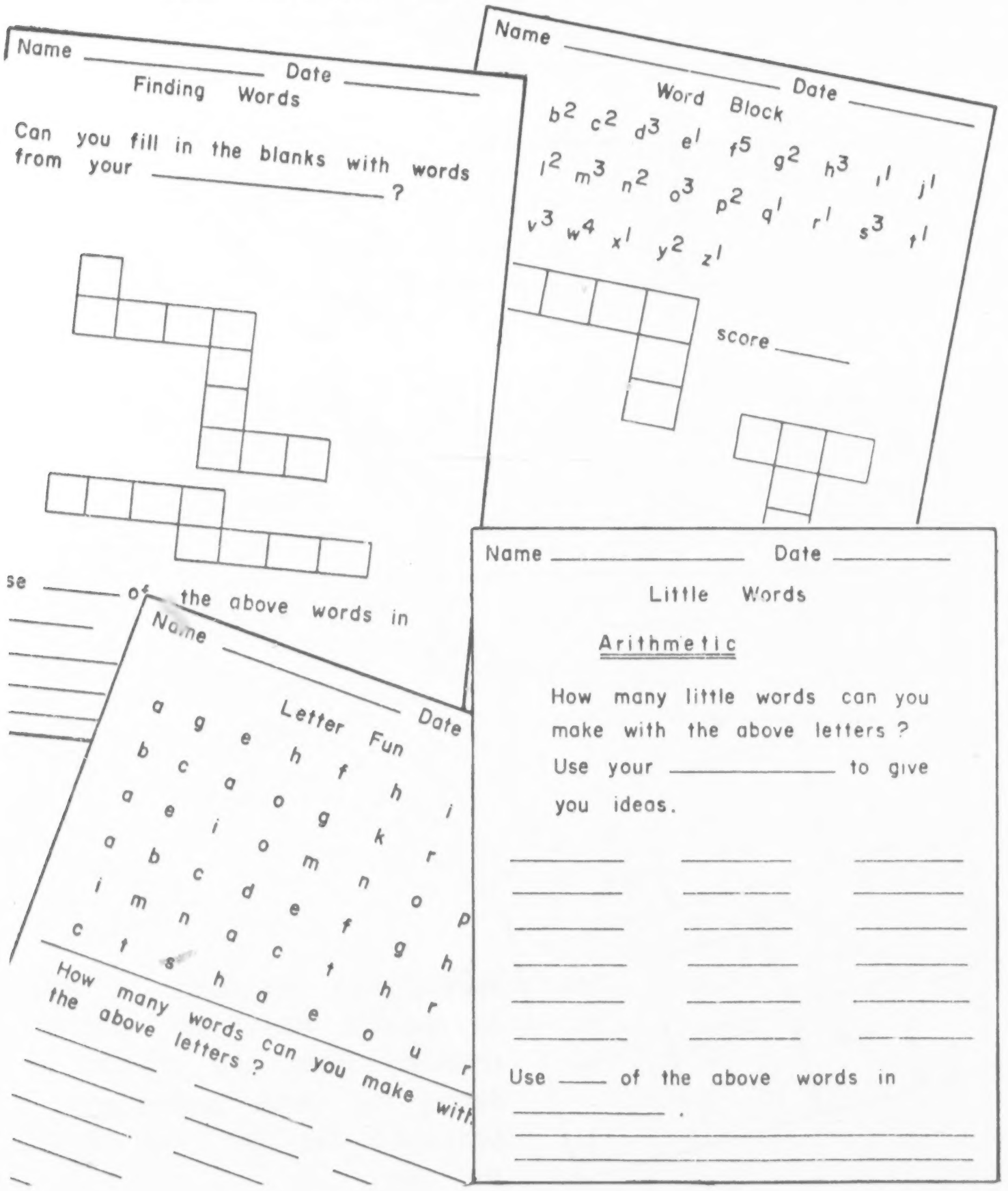


Manipulative materials as well as specific academic direction following tasks are utilized during the Order activities scheduled the last hour of the day.

Multilevel tasks differ from regular worksheets because teachers can easily modify a task to meet the needs of each individual student.

FIGURE 5.

Skill Reading Tasks.


Name _____ Date _____
Finding Words
Can you fill in the blanks with words from your _____ ?
se _____ of the above words in
Name _____ Date _____
Word Block
b2 c2 d3 e1 f5 g2 h3 i1 j1
l2 m3 n2 o3 p2 q1 r1 s3 t1
v3 w4 x1 y2 z1
score _____
Name _____ Date _____
Letter Fun
a g e h f h i
b c a o g k r
a e i o m n o p
a b c d e f g h
i m n a c t h r
c t s h a e o u r
How many words can you make with the above letters ?
Name _____ Date _____
Little Words
Arithmetic
How many little words can you make with the above letters ?
Use your _____ to give you ideas.
Use ____ of the above words in _____ .

reads and these are printed on a "3 x 5" filecard for later study. At the end of the 3-minute period the teacher aide and child work on tasks that help develop comprehension and then the child takes the cup of candy and new reading words back to his desk. Candy is first used in this activity rather than checkmarks because of the high motivation exhibited by students for practicing their reading before going to the teacher aide's desk and for concentrating during oral reading. Later, plastic counters may be dropped into the cup and counted or a tally kept of the number of lines read and this total graphed for daily progress comparisons.

After each child in a given group has had individual reading, an assignment wheel is turned; the teacher has all students put down their work and both teacher and aide circulate giving children their checkmarks. This takes approximately 3 to 5 minutes and the children learn to wait quietly for their checkmarks. The bonus checkmarks given for "being a student" will reflect such "waiting" behavior.

Next, the groups move to either *word study* or *skill reading. Word study* is done at the child's desk. The teacher circulates (while the aide continues individual reading with another group of three students) and works with individual students or small groups on reading skills. Spelling words acquired during storywriting (discussed later) are also reviewed as spelling words at this time.

After word study the wheel is turned and checkmarks are given all students. It is important to point out that during the checkmark giving period not only is the previous assignment corrected and acknowledged with checkmarks but also the next 15-minute assignment is introduced. It has been found that this type of individual transition period is very useful in maintaining the work-oriented atmosphere in the class. The teacher does not rely on verbal assignments in front of the class or repeatedly call out, "Boys and girls! Boys and girls! That means you too, Henry! Give me your attention! I am waiting for two people in row three," etc.

Skill reading involves an independent vocabulary and comprehension building activity; commercial materials—including programed units—are used. The Santa Monica staff has developed various types of word games, decoding exercises, and other activities for use with poor readers who cannot work for any extensive periods of time in reading (figure 5). The interventions used to assist a child who cannot do a reading assignment, or any other assignment for a period of time utilize the centers around the room. Students may be assigned to do a simple puzzle at the order center, listen to the record player at the communications area, or complete an art or science task at one of the other centers.

Twice a week *storywriting* is done by the entire class rather than in small groups. The teacher usually makes a short motivation presentation in some area of interest to the class (e.g., knighthood, deep sea life) and the students are encouraged to write about the topic.

Following either reading or storywriting, the class is dismissed for recess. This is taken outside the room, and as each child leaves he puts his work record card away in its holder. Upon returning the card is picked up and the children receive a possible 10 checkmarks for the recess period.

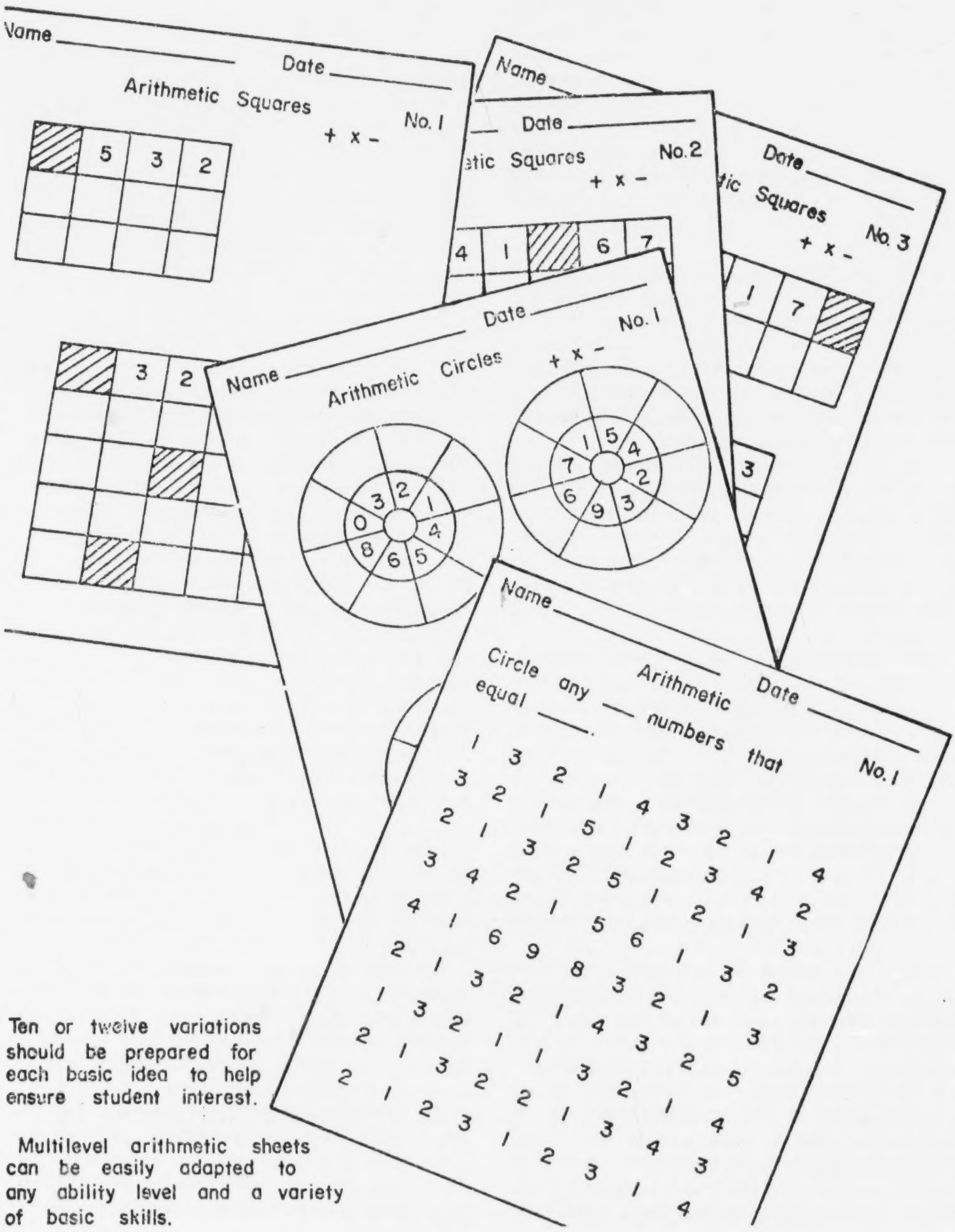
The *arithmetic* period takes place next. This block of time is divided into three periods of about 15 minutes each. Arithmetic fundamentals, including basic addition and subtraction facts and concepts, the multiplication tables and process, and division are assigned as appropriate for the first 15-minute period. The Santa Monica staff has adapted and developed multilevel arithmetic drill sheets (figure 6) which can be quickly altered to fit a particular child's level in addition, subtraction, multiplication, or division, and these may be used with slower students during both the drill and skill periods. Following this, arithmetic skills are put to work in problem solving situations. Students are given pages torn from workbooks at or near their performance levels during the next two 15-minute periods. It is important to stress that during arithmetic, however, all students receive checkmarks following each 15-minute interval.

A 10-minute nutrition period is held in the room and the children have a snack. They are allowed to move about the room and various free time activities are available. Ten checkmarks are given following this period and the children leave the room for physical education. Work record cards are taken outside to the playground and checks given when students reach the play area, finish their play, and return to the room.

Following the physical education period a 10- to 15-minute group listening activity may be used to help students effect a transition from the active play on the playground to the more restricted behavior in the classroom. During this time the teacher reads a portion of a continuing story aloud.

The final period of the day is devoted to exploratory activities. The class is divided in half with one group going to a center with the teacher while the other group goes to a center with the aide. Students spend from 20 to 25 minutes working at two of the

FIGURE 6. *Arithmetic Tasks.*



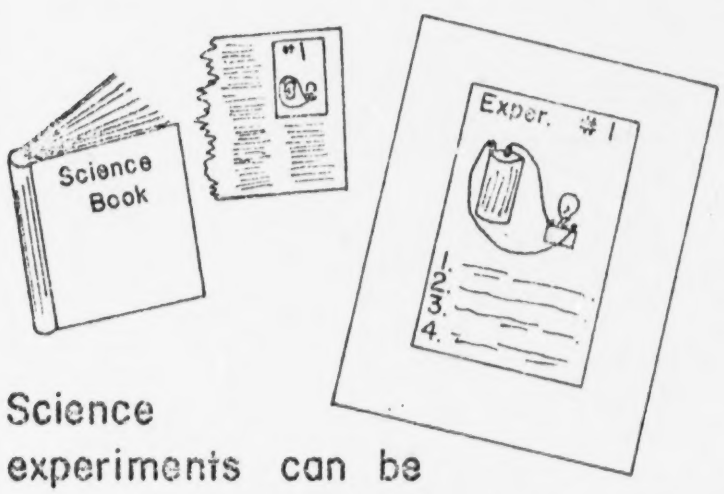
Ten or twelve variations should be prepared for each basic idea to help ensure student interest.

Multilevel arithmetic sheets can be easily adapted to any ability level and a variety of basic skills.

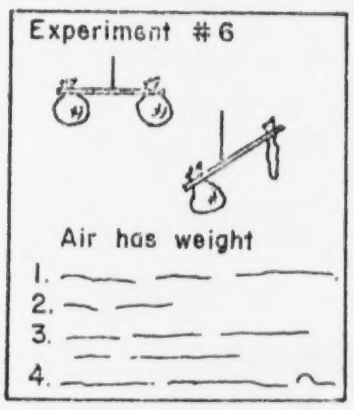
Tasks are selected for their multisensory rather than intellectual value. Each task uses concrete manipulative materials in a situation with a predictable outcome that provides the student with an opportunity to explore his environment.

FIGURE 7. *Exploratory Tasks*

—Exploring Our Environments.



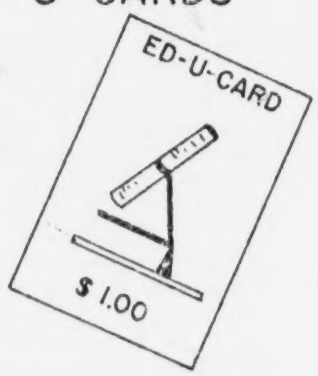
Science experiments can be cut out of Scott, Foresman or other science series and then mounted on cards.



Teachers can collect science ideas from many sources and prepare cards with appropriate science tasks

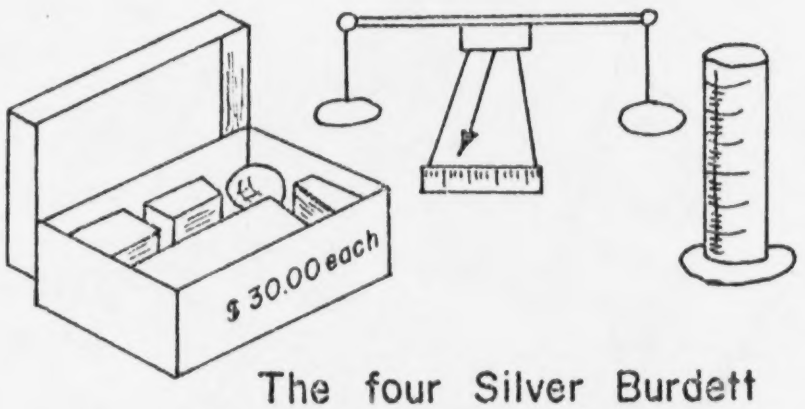
Many fine commercial materials and ideas are available.

ED-U-CARDS



Sets of Science cards with experiments are inexpensive and available.

SILVER BURDETT SCIENCE LABORATORY



The four Silver Burdett Science Labs provide a total of more than 150 experiments and are ideal for the science area.

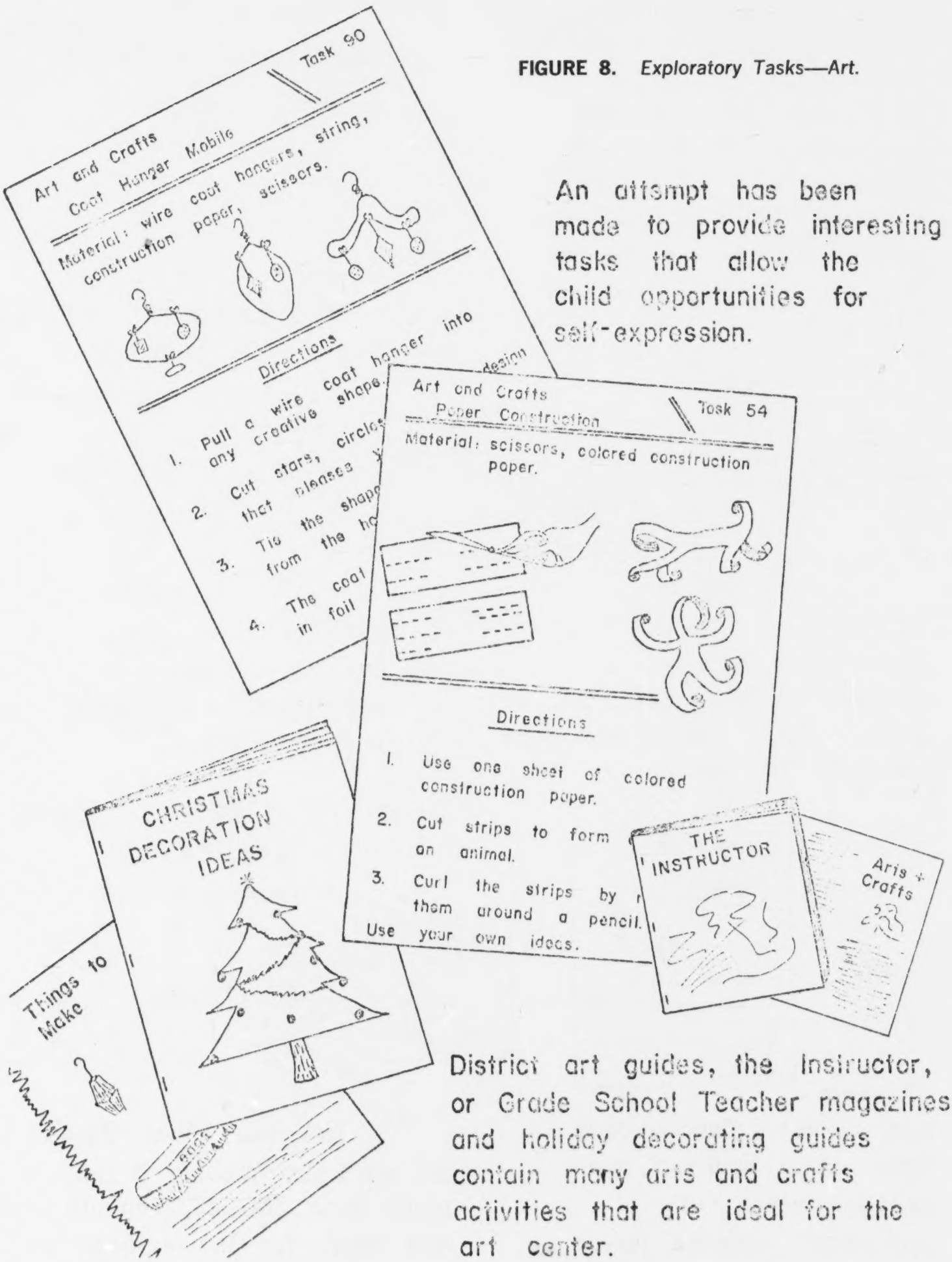


FIGURE 8. *Exploratory Tasks—Art.*

An attempt has been made to provide interesting tasks that allow the child opportunities for self-expression.

District art guides, the Instructor, or Grade School Teacher magazines and holiday decorating guides contain many arts and crafts activities that are ideal for the art center.

Communication tasks are designed to place two or more students in a structured situation with opportunities to build social skills, wait, take turns, and share.

Since the games often involve a winner, activities based on chance rather than skill have proven most successful.

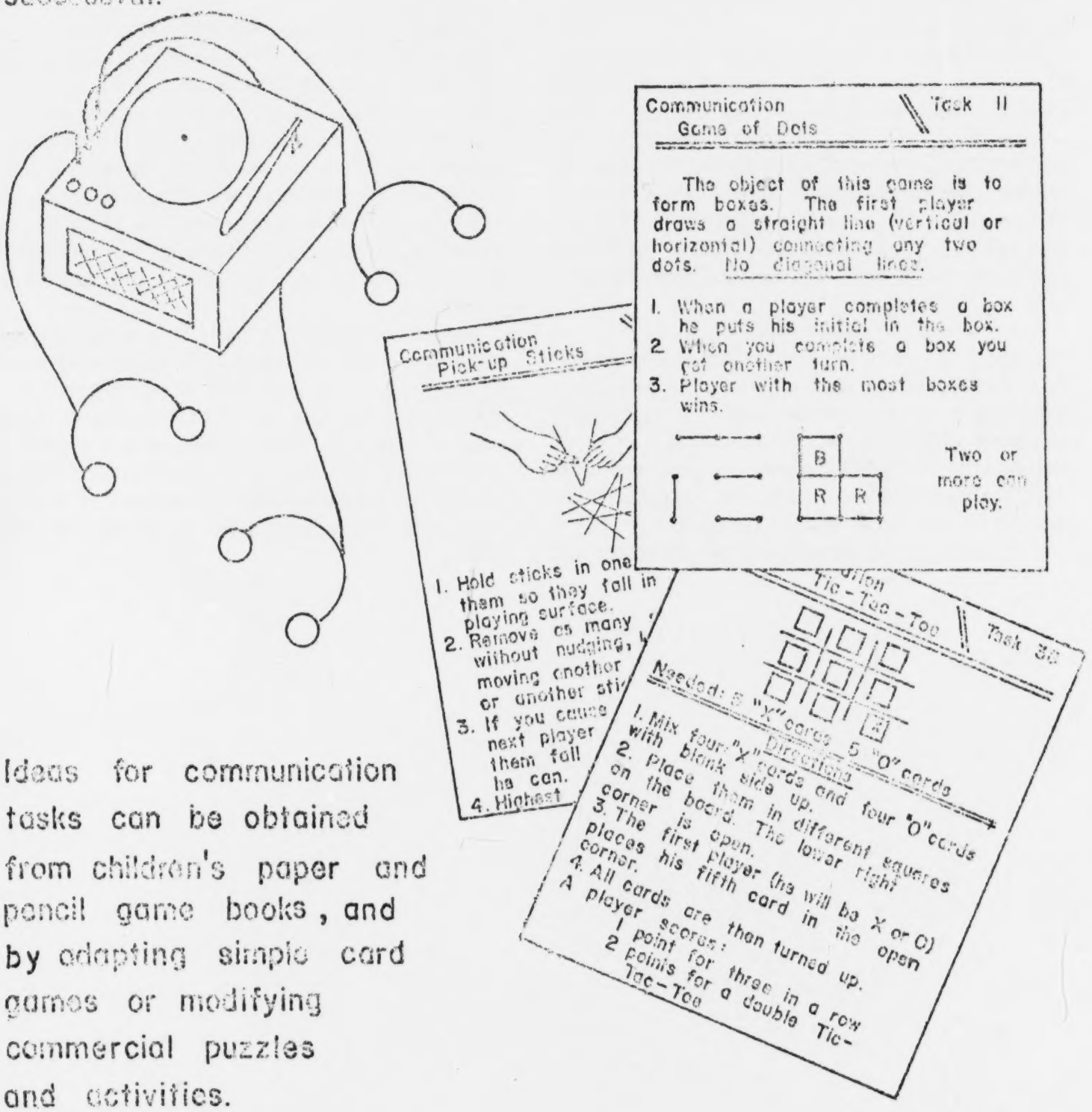

Communication
Game of Dots
Task II
The object of this game is to form boxes. The first player draws a straight line (vertical or horizontal) connecting any two dots. No diagonal lines.
1. When a player completes a box he puts his initial in the box.
2. When you complete a box you get another turn.
3. Player with the most boxes wins.
B
R R
Two or more can play.
Communication
Pick-up Sticks
1. Hold sticks in one
them so they fall in
playing surface.
2. Remove as many
without nudging,
moving another
or another sti
3. If you cause
next player
them fall
he can.
4. Highest
Tic-Tac-Toe
Task 3C
Needed: 5 "X" cards, 5 "O" cards
Directions
1. Mix four "X" cards and four "O" cards with blank side up.
2. Place them in different squares on the board. The lower right corner is open.
3. The first player (he will be X or O) places his fifth card in the open corner.
4. All cards are then turned up.
A player scores:
1 point for three in a row
2 points for a double Tic-Tac-Toe

FIGURE 9. *Exploratory Task —Communication.*

Ideas for communication tasks can be obtained from children's paper and pencil game books, and by adapting simple card games or modifying commercial puzzles and activities.

four centers in the back of the room. At the end of this period the two groups either exchange centers or rotate to another center.

Each task is selected for its intriguing interest value rather than because it falls within any particular grade level curriculum. It may be recalled that the exploratory level falls below the mastery level and hence science experiments are chosen for their multisensory rather than intellectual value. Nevertheless, simple, accurate descriptions of all science experiments are given by the teachers to each group (figure 7). Following the introduction of each day's science task the card is filed at the center and is available for students during the interventions.

Art activities are varied and have been organized by the Santa Monica staff to include projects which allow the child self-expression. An attempt is made to keep these tasks simple so that they can be completed within a 15-minute work period. However, the children may continue them from 1 day to the next. The art task cards are also filed at the art area for later reference and replication. Ideas from district guides, the "Instructor" and "Grade School Teacher" have been used (figure 8).

Communication tasks for building social skills are introduced during the exploratory period and are also kept filed at the communication area for later usage. Since games entered into by two or more children inevitably involve a winner, those based more on chance than on skill have proven most successful. Activities like battleship, tic-tac-toe, hangman, etc., have all been used successfully (figure 9).

The teacher is in command of the classroom and has many resources to creatively manipulate in a constant effort to insure the success of each student.

It is unrealistic to assume that the developmental sequence of educational goals, classroom organization, checkmark system, and interventions represents a foolproof formula for success with all educationally handicapped children. The guidelines do, however, offer sound educational, psychological, and developmental principles for training more effective teachers and establishing more adequate classrooms for disturbed children than is often possible through reliance on subjective judgment, intuition, and "cafeteria" approaches.

Evaluation of the engineered classroom design reveals its effectiveness for "launching" children into learning so that they are more susceptible to regular classroom instruction. Evaluation also indicates a carefully controlled environment with flexible task assignments and a wide variety of rewards—in other words, true individualization of instruction and guaranteeing of success—which does not promote prolonged dependency on "free loading," but effectively gets the child ready for more traditional school learning.

Behavior modification and the engineered classroom do not offer the panacea so desperately sought by many special educators as they seek to better teach children with learning and behavior problems, but do suggest certain innovative additions for a field accountable as never before to intervene and halt the educational deterioration of thousands of children with good learning potential in the United States today.

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Natchez, Miss.

The Meaning of Innovation as Reflected by the Dynamics of Dyslexia Classes for the Perceptually Handicapped

Definition of Innovation

Innovation in the education of dyslexic children means finding ways of teaching students who for years have failed to realize the potential of which they were capable. Traditional methods of instruction proved ineffective. In Natchez in 1966, no procedure for training dyslexics was available. Innovation in this project involved investigation into the need for innovation, the research of innovative ideas, the selection of innovative material, the organization of innovation, and the analysis of innovation.

Need for Innovation

It was recognized that there was a failure or deficiency in the system being used to teach dyslexics to read. Dyslexia and related disorders were reported by most authorities to account for 10 to 20 percent of the reading problems in the public schools. In the Natchez school system, many of the symptoms of the disability had been recognized by teachers for many years. But the pattern of the disability was not realized as a specific learning problem. Dyslexia here, as in many other places, was an unheard-of disability.

Finally in 1966 and 1967, parents of some students began to ask why their children, who showed normal ability on measures of intellectual potential, were doing poorly in school. In their misery, parents either blamed themselves, or the teacher, or others involved with their children. Misery may seem a dramatic word, but misery it was to have a "mystery child" who seemed bright and couldn't learn to read. Disheartening it was, to be told by a hundred voices such conflicting advice as "He's lazy." "He's smart." "He's trying." "He's not trying." "He's doing the best he can." "There is no reason he can't do better." "Find help now." "Don't worry, he'll grow out of it."

The parents were interested, their teachers were trying, and in most cases, so were the students. Teachers had suggested outside tutors for some children as early as the first grade. The students were tutored, some for years. The parents reported that as long as the tutor worked with the student, the child passed. Since there seemed to be no carry-over of independent skills, no real improvement was made.

The parents then began to ask "why" more widely. They asked psychologists and psychiatrists who felt that the students, as a result of their learning failure, had emotional problems. The parents asked physicians and neurologists who could find nothing specifically wrong on medical and neurological tests except occasionally "soft neurological signs."

Something had to be done. Weekly counseling ses-

sions did not seem to be helping; school was a constant irritation; homelife was being destroyed. There had to be someone who knew something that could really help these children. There had to be someone who knew what the problem was.

Six parents in desperation went to several different medical evaluation centers and were told their "mystery children" had the specific reading disability, dyslexia. What could be done depended on the facilities in the community.

The parents returned to Natchez determined to see that something was done for their children, since they had been told that these students could learn to read if there were special classes. They formed a parent group, and the group talked to the superintendent of schools. The superintendent agreed that help should be provided. The need, it was determined, was for specialized instruction for dyslexic students which would utilize specific material for remediation in an individualized presentation.

This remediation should be as rapid as possible so that these students could return full time to regular classes. This program also had to be economically feasible for a public school operation. The superintendent allowed a staff member to apply for a title III ESEA grant employing the criteria previously cited. The grant was funded in July 1967.

Research of Innovative Ideas

According to Dr. Charles Shedd, some 65 percent of the students in the public schools learned to read smoothly and effectively, without giving it a second thought. Some 35 percent of the school population did not attain a sufficient degree of reading skill to maintain learning in all areas. Many of this 35 percent were from 2- to 5-years retarded in reading levels.

Dr. Shedd, Professor of Psychology, Department of Psychiatry, Director of the Reading Disability Center and Clinic, The University of Alabama Medical College, Birmingham, Ala., and Director, Research Institute, Berea College, Berea, Ky., cited several major reasons for this failure. A reading problem might have been caused by educational deprivation. Some students were absent or moved about a great deal in the early grades and so simply missed basic skills they should have mastered. A second cause for reading failure might have been cultural deprivation. Where there had been a dearth of communication in the early years and where there had been no reading and storytelling, students would be slower in gaining the abstract skills of decoding and encoding. A third reason for lack of reading facility was mental retardation. The student simply did not have the intellectual potential for learning reading skills as rapidly as the normal youngster. A fourth reason was frank brain damage. In these students, neurological examinations clearly showed focal impairment which hampered educational development. A fifth reason for learning failure was lack of vision or sight or some other severe medical problem. A sixth reason for learning disabilities was a primary emotional problem which caused a variety of educational difficulties. A seventh reason for reading failure was dyslexia, a specific perceptual-motor disability, and related disorders.

As the grant was being planned, the history and definitions of the disorder were studied and methods for remediation reviewed. Reviews of the first 50 years of investigation on dyslexia had been made by Salms (1948) and Hallgren (1950). Reviews of the literature had been presented by Brewer (1964), Money (1966) and others. Examination of this material showed that since Kerr's (1897) and Morgan's (1896) description of dyslexia or congenital word blindness there had been many changes of the name of descriptions of the dysfunction. Confusingly, some 47 terms had been used to denote this disability, such as: analfabetica partialis, congenital dyslexia, psychic blindness, specific language disability, symbolic confusion, reduced reading disability, alexia, strephosymbolia, constitutional dyslexia, severe learning disability.

Wide interest in learning disabilities could be seen in the works of such investigators as: Binet (1916); Dull (1951); Fernald (1934); Gesell (1947); Monroe (1932); Orton (1937); and Strauss (1947). More recent contributors to the body of literature were Bender (1956); Rabinovitch (1959); Birch (1964); Critchley (1964); de Hirsch (1966); Frostig (1964); Kephart (1960); Kirk (1961); Money (1962); Johnson and Myklebust (1967); and Chall (1968).

Dyslexia, it was found, was a visual motor perception disability caused by a breakdown somewhere in the central nervous system which resulted in a reading problem. This definition was given by Dr. Charles Shedd.

Dyslexia was thought by many to be genetic in nature. Studies of twins by Edith Norrie showed that in identical twins there was 100 percent concordance of the problem. The concordance for fraternal twins was 30 percent, and for siblings was 17 to 20 percent. Familial occurrences of dyslexia were recognized. Dyslexia was seen in males more frequently than females, in an approximate ratio of seven to one. Dyslexics had difficulty primarily in reading, writing, and spelling.

According to Dr. Shedd, a diagnosis of a Specific Perceptual-Motor Disability included the following pattern of symptoms:

I Test Performance Indicators
1. Spotty performance on IQ test; achievement is high in some areas, low in others
2. Below mental age on tests of drawing a person
3. Visual-motor Gestalt tests poor for age in indicated intelligence
4. Poor performance on black design and marble board test
5. Poor performance on group tests which require reading and writing

II Impairments of Perception and Concept Formation
1. Impaired discrimination of right-left
2. Poor spatial orientation
3. Impaired orientation in time
4. Field-dependent perception
5. Frequent perceptual reversals in reading and in writing letters and numbers beyond age and instructional level
6. Impaired reproduction of rhythmic pattern
7. Impaired reproduction of tonal patterns

III Specific Neurologic Indicators
1. Few, if any, apparent gross abnormalities
2. Some "soft" equivocal or borderline findings
3. High incidence of left and ambi-laterality
4. Hypokinesis
5. Hyperkinesis

IV Disorders of Speech and Communication
1. Impaired discrimination of auditory stimuli
2. Frequent mild speech irregularities

V Disorders of Motor Function
1. Nonspecific motor awkwardness
2. Periodic loss of fine motor skills
3. Hyperactivity
4. Hypoactivity

VI Academic Achievement and Adjustment
1. Reading disabilities
2. Spelling disabilities
3. Writing disabilities
4. Variability in performance
5. Poor ability to organize work
6. Slowness in finishing work

VII Physical Characteristics
1. High frequency of enuresis

VIII Variations of Physical Development
1. Frequent lags in developmental milestones
2. Generalized maturational lag during early school years

IX Characteristics of Social Behavior
1. Social competence frequently below average for age and measured intelligence
2. Possibly negative and aggressive to authority
3. Possibly anti-social behavior

X Disorders of Attention and Concentration
1. Short attention span for age
2. Impaired concentration ability

The pattern presented is as follows:
1. Confusion in right-left discrimination
2. Hyperactive motor discharge
3. Disorders of attention (inattention, short attention span)
4. Lack of right-left dominance
5. Field dependent perception
6. Disturbance in visual-motor Gestalt function
7. Nonspecific motor awkwardness
8. Dysrhythmia
9. Specific learning disabilities
   a. Reading
   b. Writing
   c. Spelling
10. Disturbances in tonal, temporal, and spatial reproductive functions

Dr. Shedd used the term "related disorders" to describe learning problems which were similar to dyslexia, but which were seen with more severe symptoms in the classroom and on a test battery. Students with these symptoms indicated more signs of neurological impairment on tests and usually had more difficulty with motor coordination, comprehension, and math than the dyslexic. The problem was not found to have familial connections, but the medical history might have indicated possible causes. The differentiation in diagnosis was made so that teaching programs could be set up effectively for each student.

Many programs for children with learning disabilities were reviewed. The ideas for remediation in this relatively new teaching field were diverse. They range from visual perception training to extensive motor training to strict academic approaches.

Visual perception programs were suggested to train students to differentiate shapes, to match likenesses and differences, to note direction of objects, and to discriminate a figure from its background. Such exercises were expected to carry over to directional discrimination and visual discrimination involved in reading.

There were basic ideas that motor coordination was directly correlated to learning and that reading achievements would improve as motor coordination was improved. Some programs suggested cross-patterning and patterning exercises for neurological reorganization. Others provided for general motor skill development which would allow improvement in reading.

Some educators favored the academic approach as seen in reading methods with heavy emphasis on phonics. The methods might have been taught through multisensory reinforcement.

A variety of other approaches were advocated. Psychiatrists and psychologists suggested counseling. Optometrists suggested eye training and exercises. Many educators preferred to use an eclectic approach programmed for the individual student.

The eclectic approach was probably the most prevalent method of instruction in the few public and pri-

vate schools where remediation was being attempted. A large battery of tests was given by a highly trained staff to determine the student's abilities in every area determined to be pertinent in the evaluation. Medical and neurological evaluations were extensive. After this testing was completed and evaluated, a program was set up for each student to strengthen the areas in which he was weak.

It was felt in planning a program for the Natchez public schools that trying to institute a program set up as those in private schools would be a failure. This small public school system did not have and could not obtain the highly trained testing and teaching personnel of a large city or private institution. It seemed that if this were the only plan available, the Natchez dyslexia program would be partially or possibly totally ineffective.

Selection of Innovative Material and Methods

In looking for an organized testing and teaching procedure useful for regular school personnel that successfully departed from traditional methods, the innovative work of Dr. Charles Shedd was found. Dr. Shedd, a clinical psychologist with an additional master's degree in education, felt strongly that if the large numbers of students with this problem were to be reached it must be within the existing public school framework.

In this plan the teacher referred children who were having reading or learning problems for testing. Dr. Shedd and his staff had compiled a battery of five tests, including an individually-administered IQ test (WISC or Stanford-Binet); an oral reading test (Gilmore, Gates, or Gray); a test of left-right directionality, Draw-A-Person Test; Berea-Gestalt Test; and a handwriting sample. A case history was requested from the parents.

These tests were individually administered with great attention given to the child's performance. A definite pattern of performance was noted on the tests of those students with the specific visual-motor perception disability, dyslexia. If the student was seen to display any degree of the problem—mild, moderate, or severe—he was then assigned to a special class where the material used to teach reading, writing, and spelling was the Alphabetic-Phonetic-Structural-Linguistic Approach to Literacy (APSL).

Dr. Shedd and his staff wrote APSL as they worked with approximately 100 dyslexic students every summer for nine years at the Reading Research Institute, Berea College, Berea, Ky. At Berea there was one "untrained" instructor for every student. The small trained staff supervised the teaching closely. The untrained instructors were, for the most part, college students.

A trained teacher was never hired during the nine summers the material was developed and refined. The reason for this procedure was to determine if untrained personnel could be used with highly-structured material and trained-staff supervision to improve the reading skills of dyslexics. The average improvement in the Reading Research Institute 8-week summer programs had been approximately a 2-year gain in oral reading ability. The use of para-educational personnel under staff supervision proved successful and indicated that community volunteers could be used by public schools. Experiments in communities confirmed this idea.

APSL, as its name implies, was an alphabetic–phonetic–structural and linguistic approach to teaching reading. The method was taught through a multisensory approach. The material incorporated into its framework all of the visual discrimination, visual memory, auditory discrimination, and auditory memory components which had to be mastered by dyslexic students. Since all of these weaknesses were realized when the program was constructed and drills were provided within the APSL material, wide use of various other programs was not necessary. Some other material might have been added as it was needed by individual students.

The Organization and Results of Innovation

In September 1967, the Perceptual Development Center began to instruct 44 students who had been tested in August. Characteristics of the group were: 34 males, 10 females, age ranged from 7 to 15 years, 41 percent had been retained 1 year in school, 9 percent had been retained 2 years (most of those who had been retained repeated the first grade). The younger group (7–10) had a mean IQ of 99 (WISC), and the older one a mean IQ of 96. The younger group ranged in reading level from 0 to 1.9 and the older one from 1.3 to 5.2.

1968 Program

The trained staff consisted of the director, three teachers, a counselor, a recreational director, and a testing supervisor. The materials and methods used for instruction of reading, writing, and spelling were Dr. Shedd's Alphabetic-Phonetic-Structural-Linguistic (APSL) Approach to Literacy. This series presented a completely structured breakdown of the English

language combined with a multisensory approach. Integral to the training were auditory discrimination and perceptual motor skills. Math, science, English, and social studies were taught with traditional material, but were geared to the needs of the dyslexic. Flexibility of scheduling was paramount to allow each child's educational program to be changed as he progressed.

Volunteers

In order to give each student one-to-one instruction in APSL material volunteer instructors were used, as suggested by Dr. Shedd's model. Community-minded women were recruited to work with dyslexic students. Each volunteer was assigned a specific day and time to work. The volunteers were given a five-hour workshop by the director. Regular workshops were held periodically. Volunteers were always closely supervised by staff teachers.

Results

Both classes at the PDC were retested with the Gilmore Oral Reading Test in May 1968. At the time of retesting 320 hours of specific reading instruction had been given. The results of the younger group indicated a 1.9 grade average increase. There was a range from zero to 3.2 grade levels. Eighteen of the 20 students made progress ranging from .9 to 3.2 years, while only two failed to make measurable progress. The results of the older group indicated an average increase of 2.4 grade levels with a range from 1.0 to 4.7 years.

Peripheral to the design of the study, but of tremendous consequence, was the fact that the children participating in the study improved behaviorally. They were typically those identified as behavior problems; few knew how to handle themselves in groups, fewer had an idea of what was expected of them in a learning situation. A setting with children who also had problems, understanding teachers who the children knew were interested in them as individuals, and most of all, success in learning to read seemed to provide a basis for improved self-concepts.

Four other classes were established later in the year. These employed different variables. The schools involved were: Braden Elementary School, Cathedral Elementary and High School, Washington Elementary, and Morgantown Elementary.

At Braden, 42 children diagnosed by the PDC as dyslexic were assigned to two classes. The mean IQ was 95. The ratio of students to volunteers was five-to-one. After 150 hours of instruction per child, test-retest data indicated an increase of 1.9 grade levels. Two children made no measurable progress.

Fourteen children ranging in ages from nine to fourteen years were accepted into a program at Cathedral Elementary and High Schools. The average IQ was 105. A one-to-one ratio of instruction was employed. The program began in October, and the retest in May with the Gilmore indicated an average increase of 1.3 grade levels.

Morgantown and Washington began a program in March. The Washington children ranged in age from 10 to 12 years. The average IQ was 97. The class at Morgantown ranged in age from 7 to 9 years. The average IQ was 99. The volunteers worked on a five-to-one ratio. The total time per student in the remedial program was 50 hours. The average rate of increase on retesting at Morgantown was .55 grade levels and at Washington was .92 grade levels.

In the period from September 1967 to August 1968, the preliminary dyslexia battery was administered to approximately 1,828 children referred by teachers as having learning problems. Nine hundred and twenty-nine of these children evidenced the symptoms of dyslexia, and 899 were determined not to have this specific reading problem. Of the entire school population of the three-county area, 10.2 percent were found to have some degree of this problem.

Individual results for each student tested were prepared and given to the referring teacher and school principal. It was then the principal's decision to begin a special program for dyslexic students in his school. To give the principal the opportunity to set up classes for these students, an inservice training course for two teachers from each school was planned.

Summer Program 1968

During the summer of 1968 the regular program was continued and a special program initiated. The 43 students attended the program for four hours a day and received individual reading instruction in APSL. Auditory discrimination, math, and English were continued as in the regular school year.

Twenty-five additional students attended an afternoon program for individual APSL instruction and for group auditory discrimination exercises. The volunteers for the afternoon group were parents, Future Teachers of America, Key Club students from Natchez-Adams High School, and college students. Staff teachers supervised these volunteers. In 56 hours of instruction the 25 students in the afternoon program made an average improvement of 1.2 years in oral reading ability.

Fifty teachers in two sessions attended an inservice

training course at the PDC during the summer. During the 4-week course the teachers received 1 hour of lecture by the director and 3 hours daily on-the-job training. Practice in giving auditory discrimination was offered. A second introductory workshop on dyslexia was offered to reach the teachers in the counties included in the grant for 1968 and additional teachers in the original grant area. This workshop was taught by Dr. Shedd.

Second Year 1968–69

The success of this approach to teaching reading skills to dyslexic children was widely recognized. The dyslexia program is now in its second year of operation and the PDC has expanded to accommodate 63 students and has four teachers and four teacher aides.

Adams, Franklin, and Wilkinson Counties have chosen to institute programs with the help and supervision of the PDC staff. At present 738 dyslexic students in 36 classes are receiving special instruction one hour daily for their specific reading disability. The teachers for these classes were trained in the use of APSL material in the Summer 1968 Inservice Training Course. Though supervised by the PDC staff, each of these classes is the financial responsibility of the individual school system; no support for materials or teachers is derived from the grant.

At present there are approximately 279 volunteers in the three-county area instructing dyslexic students under close teacher supervision. Student-instructor ratio varies from class to class. At the end of the first semester (18 weeks) of instruction in APSL the average improvement in oral reading ability of all students was 8 months as measured on the Gilmore Oral Reading test.

An Analysis of the Innovative Material

The material could only be analyzed, as any material, by actual usage. In teaching APSL the Perceptual Development Center staff had carefully evaluated the merit of this new material in improving the reading skills of dyslexics.

A method to teach dyslexics had to be alphabetic, phonetic, structural, and linguistic because the dyslexic did not "see" the structure and pattern of the language. The associations that the normal reader made were rarely made by the dyslexic. He had to be taught step by step.

Most methods included some of these factors but not all of these approaches. APSL also utilized the multisensory approach. This use of all of the senses for learning was vital for the dyslexic. Since the student with dyslexia had poor visual-motor perception and poor auditory discrimination, it was important that he learn through not only sight and hearing, but also through tactile and kinesthetic stimulation. In this way the dyslexic learned through four senses; therefore, what he saw and heard was reinforced by movement and touch.

In the Introductory Book ot APSL these students were taught all of the alphabetic and phonetic information of the English language: (1) the name of each letter; (2) proper formation in writing each letter (they needed much supervision in the beginning or they formed letters in the wrong direction and "set" poor writing habits); (3) the sound of each letter; (4) voiced-unvoiced information about each sound; (5) differentiation of vowel and consonant; (6) visual-discrimination of the printed and cursive lower case and capital letter; (7) the sequence of the letters in the alphabet; (8) how to sound letters in words; (9) how to spell simple words; (10) auditory memory by sentence dictation; (11) directionality of the language; (12) how to break down simple words with the sounds and word families being taught.

The material in the introductory book taught the pattern and structure of words to the student and the dyslexic began to "see" how to attack he language.

"Here is the beginning sound (which he has learned as detailed earlier)—a

Here is the unvoiced consonant—t

Put them together—at

Now we have built a word family. This is a unit of language on which we can build many other words by adding beginning consonant sounds—

*b*at
*c*at
*d*at This is not a real word. We will not use it.
*f*at
*h*at
*m*at
*n*at
*p*at
*r*at
*s*at
*v*at

Beginning sounds + word families make words."

The student was carefully taught each sound of the language and each word family. He learned to read, write, and spell hundreds of words to which this pattern could be applied. These words did not have to be memorized. Irregular words (introduced much later) had to be memorized, but *all* patterned words were taught first in APSL.

One reason APSL helped these dyslexic students where other methods do not succeed was seen in a second grade spelling list:

desk	put
fish	shall
pat	was
hot	run
tan	ram
set	saw

It was noted that no two words ended in the same word family: very few began with the same beginning consonant sound. Since there was no pattern evident here, the list had to be memorized. The normal reader "saw" the similarities in words. He "saw" that pat, sat, and cat looked alike and sounded alike in part. The dyslexic child "saw" in wholes and very rarely found these similarities and used them in spelling, reading, and writing. He could be taught if the material were presented in such a way that he could master the patterns.

In the introductory book, then, all of the consonants and short vowel letters and sounds were taught to the child. He was shown how to put these together to make words built on word families. He was taught to decode our language.

1. He saw–c a p
2. He couldn't read it.
3. The teacher said, "What is the beginning consonant sound?" c(k)
4. "What was the word family?"–ap
5. "Now put it together."
6. "Call it."–cap
7. "What does cap mean?"

In book I each consonant blend of the language was taught. These were: bl, cl, fl, gl, pl, sl, spl, br, cr, dr, fr, gr, pr, tr, scr, shr, spr, str, sc, sk, sm, sn, sp, st, sw, tw, squ, qu.

Each consonant digraph was taught. These were: ch, sh, $\overset{1}{\text{th}}$, $\overset{2}{\text{th}}$, wh.

Each word family was taught: ab, eb, ib, ob, ub, ack, eck, ick, ock, uck, ad, ed, id, od, ud, ag, eg, ig, og, ug, am, em, im, om, um, an, en, in, on, un, and, end, ind, ond, und, ang, ing, ong, ung, ank, ink, onk, unk, ant, ent, int, unt, ap, ep, ip, op, up, ash, esh, ish, osh, ush, ast, est, ist, ost, ust, at, et, it, ot, ut, atch, etch, itch, otch, utch, aff, iff, off, uff, all, ell, ill, oll, ull, ass, ess, iss, oss, uss, act, ect, ict, uct, adge, edge, idge, odge, udge, aft, eft, ift, oft, uft, amp, emp, imp, omp, ump, ance, ence, ince, unce, anch, ench, inch, unch, apt, ept, ipt, ask, esk, isk, usk, asp, isp, usp, ath, eth, ith, oth, uth, ax, ex, ix, ox, ux, ext.

At the end of book I the student could read, write, and spell 4,000 words based on the pattern:

Beginning consonant sound + word family
consonant blend + word family
consonant digraph + word family
As in the original word family *b*at
*fl*at
*ch*at

in book II the student learned the rules of the English language which applied to these patterns of the language, such as:

1. CVC rule–when you have a word which fits the pattern consonant–vowel–consonant the vowel is usually short.–Example–fat
2. The "magic e" added to a CVC pattern word changes the vowel from short to long (The e is not really silent–it serves a purpose) Ex. fate
3. The k sound after a short vowel is usually spelled ck. Ex. kick

Every rule which showed a pattern of the language was taught with many word examples, and the words were used in sentences for reading material. Every mistake made in reading, writing, or spelling was written correctly on sandpaper with the fingers, then on paper with a pencil. Each rule was pointed out repeatedly in meaningful reading material where it applied.

After all of the pattern rules were taught, exceptions of the language were taught. For example: "*tion* is a pattern in the language which says, 'shun.'

It is not spelled the way it sounds. It is in such words as

action
faction
reaction
attraction–etc."

These words were then presented in sentences. In this way each exception of the language was taught. At the end of book II 8,000 words of the language should have been mastered.

Book III dealt with higher language forms and completed freshman college material. All of the structural and linguistic material was completed in this book. When the student completed the series, he had been presented all of the alphabetic and phonetic information of the language in a structural presentation and a completely linguistic breakdown of the language from the simplest unit. Beginning with the phoneme the method proceeded to the more complex forms which were patterned and which were exceptions.

Vital to the APSL method was auditory discrimination which paralleled the APSL manual in a series of drills, training the student to hear and identify begin-

ning, middle and ending sounds in words, word families, words and word families that are different than others and different short vowel sounds. This training improved spelling and reading.

Through APSL dyslexics learned to deal with the language so that they could effectively read, write, and spell. Without special training they might have compensated for a great many of their problems, but never would they have fully understood and dealt with the language as effectively as they could after special training.

Conclusion

Innovation in teaching for dyslexic children in the public school meant a completely new approach which consisted of:

1. *A testing program* to determine the cause of reading failure so that each student could be placed in a class most suitable for his needs. It was necessary for teachers to be trained to screen for specific learning problems and a program coordinator to be available to help in evaluation when necessary.

2. *A teaching program* which consisted of a realistic approach to the problem of public schools and the number of children who had this problem.

a. Classes were instituted in every school.

b. Reading was taught by a method which was devised to instruct dyslexics in the mechanics of reading in a way in which they can learn best. Regardless of the name of the method, it had to include alphabetic and phonetic information as well as a completely structured-linguistic approach. A multisensory reinforcement seemed to be necessary for learning and retention.

c. Volunteers from the community were recruited to give individual help to each student in reading. Few, if any, school systems could have afforded one teacher to every four to six children for 10 to 20 percent of the children in their schools. Four to six were as many children as one could supervise as closely as necessary. The community had people who were intelligent and talented enough to do this work under close staff supervision. These people helped a child, one, two, or three days a week and made a contribution to the student's life which could not be made any other way. A small and competent staff gave workshops for, and supervised a large number of, volunteer instructors.

d. Auditory discrimination instruction was absolutely necessary.

e. Perceptual motor skills were taught to improve coordination and game skills.

f. Classroom structure was paramount. The teacher had to organize everything, not only the lessons, but also the transition from one period to another. If the structure were so established that the student knew exactly what to do and to expect at each hour, he was considerably calmed, learned to listen, and learned to follow directions.

Self control was *the* goal. In the beginning the teacher had to realize that all control was her responsibility. She transferred control to the students as the year progressed.

Classroom distraction, such as colorful displays and bulletin boards, was not used in the beginning of the year and kept to a minimum later; but cubicles did not have to be used in classes for dyslexic children if the structure was good. It was better to teach these students in surroundings as nearly like the normal as possible. It seemed to be a mistake to treat all of these children as the severely neurologically impaired; they did not need complete removal from all stimuli.

In summary, it was found that specialized instruction for dyslexic students was economically feasible* in the public school program with reduced treatment time for remediation through the use of paraeducational personnel under close staff supervision.

Implications of the Project

That 10 to 20 percent of the school population is not learning to read effectively due to a physical disability which results in a specific reading problem, calls for serious consideration. These facts should encourage teacher training institutions to investigate and provide instruction in the learning disability field for all teachers and to provide majors for special teachers. These facts should answer for schools why some seemingly bright children don't "measure up" to what they can do. The fact that dyslexia and related disorders exist should make educational institutions which strive to provide a good program for all students revamp many of their present reading classes. Accepting the fact that a sizeable group of children has a specific reading problem caused by a physical disorder means work and change for every school that tries to answer the needs of these students. Knowing that dyslexia exists demands one of two actions—complete rejection of the facts or innovation.

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*Though the PDC program was entirely financed by the title III grant, 39 other classes were begun under the responsibility of their school systems.

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and St. Martin Parish (La.) Schools

Who Profits from Innovation?

The Program for Retarded Educable Pupils (PREP) in St. Martin Parish, La., is composed of numerous innovative aspects and functions, all based on improving services to educable mentally retarded (EMR) children and their teachers.

St. Martin Parish, in southwestern Louisiana, has a relatively low economic structure with most of the people involved in agriculture, fishing, or working in the various sugar and pepper mills—all seasonal occupations. The parish has been ranked 64th among Louisiana's 64 parishes in literacy, and a high percentage of the children in school function well below their chronological age. Environmental deprivation, inadequate intellectual stimulation, and infrequent use of the English language are common characteristics of the home life of many of the parish children. Bilingualism is a fact of life in the schools, as many of the rural people speak French, or what they call "Cajun French," a combination of a French and English dialect.

Prior to the inception of PREP, very little was done for the numerous EMR children in the schools. They were discouraged at every turn, following the well-known pattern of repeated failure until they reached the "dropout age" at which point they left the schools, ill-prepared for any kind of fruitful social or occupational adulthood. The special class teachers were faced with teaching those "unteachable" children who created enough disturbance in regular classes to be sent for evaluation and subsequently placed in the nearest special education class, regardless of the current class make-up (in terms of sex, age, IQ's, etc.).

Three years ago the St. Martin Parish Supervisor of Special Education and the Head of the Department of Special Education at the University of Southwestern Louisiana wrote a title III proposal asking for funds to establish an innovative program for retarded educable pupils. The request for funds was accepted and one year later the St. Martin Parish Program for Retarded Educable Pupils was described by the U.S. Office of Education as one of eight particularly worthwhile projects in the entire country.

A description of the innovative factors leading to a change from a typically misguided, uninspired program for the mentally retarded to one worthy of emulation by large or small school systems will be the focus of the remainder of this paper.

This paper is written from the perspective of the auxiliary professor, whose job is perhaps one of the most innovative aspects of the program. The position of the auxiliary professor was written into PREP to facilitate coordination of services offered by the University of Southwestern Louisiana Department of Special Education with the needs of St. Martin Parish.

The value of using a "clinical professor" to carry the advice and services of university special education departments out to school systems has been repeatedly alluded to in professional literature. Also, the value of using an interdisciplinary approach to diagnosis and class placement has been recognized. PREP's auxiliary professor is one answer to implementing these two concepts. The auxiliary professor spends a portion of his time, typically two afternoons per week, working on the campus of the University of Southwestern Louisiana (USL). During the time he is on the USL campus, the auxiliary professor confers with the Director of Special Education concerning the progress of PREP, its needs, its problems, and its role in the Parish. The auxiliary professor also meets with

members of a special team consisting of a psychologist, social worker, educational consultant, and speech and hearing diagnostician concerning the status of cases referred to the USL Special Education clinic for diagnosis. The auxiliary professor teaches the methods and curriculum course for prospective teachers of the mentally retarded using the classes, programs, and teachers involved in PREP as his basis for instruction. The latter activity involves conducting numerous tours and observation sessions into the PREP classes and has aided in the recruitment of teachers for the St. Martin Parish Special Education program.

Within the Parish, the auxiliary professor fulfills the following functions: (1) acts as a supervisor of the PREP teachers, offering suggestions and recommendations for curriculum planning and development; (2) plans and conducts inservice workshops to upgrade the PREP teachers' use of diagnostic teaching techniques; (3) serves as a special education "consultant" to regular class teachers having exceptional children in their classes; (4) serves as a psychometrist for the periodic evaluation of PREP pupils and the screening of potential PREP candidates; and (5) participates in other special education related activities as directed by the parish supervisor of special education or the PREP director.

The auxiliary professor position has been cited by program evaluators as one of the most valuable aspects of PREP.

The Meaning of Innovation

To The Children:

As a direct result of the innovations brought about in their learning situations, the children involved in PREP are much better able to accept themselves as worthwhile human beings. Before the inception of PREP, these students were considered "third-class citizens" by regular school personnel, other children, and themselves.

It is well known that people develop their self concepts according to how they feel they are perceived by others, and mentally retarded children are not an exception to this rule. With the advent of PREP, the special class pupils suddenly became something truly "special" with positive connotations given to the "special." They were housed in shiny new buildings, used the very latest educational materials and supplies, and were afforded learning opportunities far beyond any that had been proffered heretofore. Soon regular class children began to take notice of the exciting kinds of things going on in the PREP buildings. As children are naturally curious, the "normal" children started investigating the special things being done by the PREP children and then, since children are also prone to attempt to manipulate their environment, to inveigle themselves into friendship situations with special class children to gain access to the goodies. Thus, the special class children felt that they had finally arrived.

Before PREP, the special class children had nobody to intercede for them when they occasionally incurred the wrath, justly or unjustly, of school administrators who looked upon classes for the mentally retarded as necessary evils if they were to maintain peace in the regular grades. Mentally retarded boys were frequently thought to be sex fiends when they reached puberty and principals were certain that they knew the culprits responsible for all of the pornography, obscene language, and girl chasing on their campuses. Now things are changing somewhat: principals frequently call on PREP staff personnel for assistance with discipline matters dealing with special class children; regular class teachers are learning the characteristics, mannerisms, and expectations of mentally retarded children through inservice programs sponsored by PREP. Needless to say, as the teachers and administrators learn, their behavior toward these children changes. Thus, through the innovative use of materials, supplies, and personnel, PREP children have become able to accept themselves as worthy individuals and to recognize that they are acceptable to others.

Innovative techniques of inservice instruction for the teaching staff have increased the value of the children's education. Teachers have participated in intervisitation sessions where they observed other competent special class teachers in action. These visits have been extensive in duration, allowing the visiting teachers to observe the "climate for learning" within the class, and affording them an opportunity to fully understand the teaching methods used and how the students and teacher relate to the school and its activities. These intervisitations resulted in a marked increase in the quality of teaching of several PREP teachers.

Other inservice activities culminated in the development of a reporting system which will enable the teacher to individualize her report cards in an intelligible manner while still keeping perspective between the relationship of her class to the school. This inservice activity also resulted in the adoption of a behavior-performance checklist to further aid the teacher in making valid educational decisions about the curriculum for individuals as well as the entire

class. As a result of these activities, PREP children will have a more highly individualized, consistent, and flexible curriculum than had previously been possible when teacher observation was the only criterion for curriculum development.

Exceptional children benefit in still another way as a direct result of the innovative use of a pre-first grade class for children who are too socially and intellectually immature for normal progress in the regular first grade curriculum. At the beginning of each school year, first grade teachers are asked to submit referrals on those children who seem to be functioning below the norm for their class. These children are then tested with a battery of tests including intelligence tests and a readiness test to determine their capacity for academic work. Children who test so low that their failure in the first grade is almost certain are removed from the regular class and placed in a PREP initiated "Readiness" class. These classes are kept small, 12 to 18 students, and spend the year experiencing a wide range of readiness activities such as: extensive language training, since many of these children are extremely deficient in the use of English; field trips to surrounding points of interest (many of these children have never before been more than a mile from home); and participation with a wide range of experimental materials designed and planned to increase the children's vocabulary, comprehension, and general knowledge of their world.

Exceptional children who are placed in readiness classes benefit because they are never forced to fail, as they surely would if placed in a normal class situation. During their year in the readiness class they are evaluated by the USL special education team and placed in an appropriate class setting the next school year.

"Normal" children who are simply slower maturing, or "late bloomers," have repeatedly been better first grade pupils after spending one year in readiness class. They are usually among the top achievers by the end of the first grade and having never failed are well adjusted, self-achieving children.

To Parents:

PREP personnel initially experienced some difficulty getting parents to agree that special class placement was the best thing for their children. The stigma of having a child in the "retarded class" was more important to these parents than the reasons for the special placement; and this attitude was understandable in light of the class conditions prior to PREP. With the initiation of rational, sequential procedures for involving parents in the diagnostic and placement process, conflicts between the expectations of parents for their children and the reality of their situation have been substantially reduced.

PREP has utilized the services of social workers attached to the USL Department of Special Education on a regularly scheduled and consultant basis. These trained people work directly with the parents of retarded children, as well as assist the PREP staff with techniques of parent counseling.

Parents of retarded children are naturally concerned about the future welfare of their children. PREP has substantially eliminated many of these parental worries through careful, thorough explanations of the problems of retardation and the steps being taken by PREP to assist these children. Parents who are particularly reluctant about placing their retarded child in the PREP program are invited on a tour of the facilities to see for themselves the types of things the children are doing. Few parents taking this tour still refuse to allow their children to participate for it quickly becomes obvious to the visitors that the classes are not designed to teach normal, or watered down, curriculums. PREP children are being taught skills, attitudes, and habits which are consistent with their needs and abilities, and the methods used are so nontraditional that even unsophisticated parents can see that the children are getting "special" teaching.

PREP teachers have been encouraged to visit the homes of their pupils since most of the families do not have the necessary transportation for the parents to come to the schools. These visits have proven tremendously successful from a public relations standpoint as well as from the usual benefits accruing when there is good rapport between the home and school.

As a result of these kinds of parental involvement, parents of children with problems are much more willing to have their children evaluated; and they accept the results of the evaluation and recommendations for educational prescriptions much more readily than has been the case in the past.

During the school year, 1969–70, PREP plans to initiate still another innovative method of reaching the parents of pupils: the parents to be bused to their children's schools to attend meetings with other parents, the teacher, and other PREP staff members. Meeting topics include the relationship between the school and home, types of discipline, the need for parental involvement in school affairs, and what the parents can do for their children's class. It is expected that these meetings will evolve into closely knit parent groups whose objective will be to work with the school for the betterment of their children's education.

Thus, the innovations initiated by PREP have directly benefited the parents through giving them peace of mind about the future of their children in school and adulthood, and in helping them learn to accept and understand their handicapped children. Since parents are being invited to meetings, visited, and consulted, they have begun to feel a part of the school system and are accepting the responsibility of assisting in their children's education.

To The Special Class Teachers:

Prior to PREP, special class teachers were "low men" on the totem pole in terms of receiving the materials, supplies, and advice necessary for the implementation of a progressive "special" class. Now, of course, all of that has changed. PREP teachers have the finest of materials designed for use by special education teachers; they have the ear of the PREP staff who are highly trained professionals in the field of special education; they hold an enviable position in their schools because of the uniqueness and applicability of their materials, supplies, and curriculum; and, through more selective employment procedures and practical inservice activities, they are much better prepared to do prescriptive teaching with individual pupils.

The methods and curriculums employed by PREP teachers have evolved from low-keyed–watered down –versions of those used by traditional teachers in regular grades, to a truly innovative application of learning theory designed to meet the needs of individual children within special classes. This claim is frequently made for many special classes based on the theory that if you place fewer students in a room with a teacher, they will obviously be taught creatively, individually, and scientifically. Such luck, of course, is usually not the case; these smaller classes frequently become only smaller regular classes with their only claim to uniqueness or "specialness" being their reduced size.

PREP teachers are involving their pupils in an activity/experience oriented curriculum. Teachers, along with their pupils, decide on a basic core or topic to be considered and all of the class academic (and much of the non-academic) activities are related to that topic. The intent of the curriculum is to impart knowledge to the children, rather than mere information. Through actual involvement with the activity, or series of experiences and activities, children are able to understand more than just basic facts which would normally be related to them in a stale antiseptic manner. Children are assigned, or choose, roles to fulfill in each activity based on their abilities and interests. The teacher's responsibility is to direct the activity and children in such a way that the children are forced to stretch their comprehension and talents, but not to the frustration point. Through this type of curriculum, children never fail, are always highly motivated, and learn to think. This curriculum is applicable to all class levels involved in PREP–from preacademic to the vocational level.

At the onset of this innovative conception of curriculum and method of teaching, there was, understandably, a certain amount of reluctance on the part of some teachers. After all, it is much easier to simply assign pages in workbooks, to require all of the students to do the same things, and to stress quiet and order at all times. However, through the use of inservice intervisitations and other inservice group meetings, the idea of change was implanted in the minds of most doubters. The auxiliary professor was able to follow up inservice activities with visits to each teacher twice a month on a regular basis, and more frequently if needed, to assist in implementing the activity/experience approach to curriculum development. By the end of the second year of PREP most of the permanent staff of teachers had become quite adept in using materials and supplies ordered to facilitate the new type of curriculum and were quite excited about the wide range of teaching possibilities available to them, once unshackled from tradition.

All PREP teachers participated on a curriculum writing committee during the first year of PREP. USL consultants were utilized and project objectives were twofold: (1) to prepare a working guide from which teachers could develop a sequential organized curriculum with curricular objectives and methods designed for educable mentally retarded children, and (2) writing the guide would serve as a method of updating the attitudes and skills of special class teachers concerning retarded children, their capabilities, needs, and interests.

The curriculum guide was divided into five levels based on chronological and mental ages of the pupils: preacademic, primary, intermediate, prevocational, and vocational. Teachers were assigned to assist in developing sections of the guide for the age level children they were employed to teach. One member of each of the five committees sat with the group teaching older children, and one with the group teaching younger children. This procedure encouraged a smooth, sequential development and exchange of ideas between teachers of various levels, providing a continuous, consistent curriculum. At the beginning of PREP's second year, the teachers and staff, along

with USL consultants, participated in a 3-day in-service workshop designed to familiarize all concerned with the finished curriculum guide and to discuss its various applications. The auxiliary professor was able to follow through during his supervisory visits, and it is felt that most of the teachers are profiting from use of the guide.

During the third year of PREP, the guide will be rewritten to incorporate many activity/experience units and other suggestions that the teachers have been asked to note as the second year of PREP progressed. The finished product, then, will be an amalgamation of many minds, several teacher years of experience, and unique in its mode of inception, implementation, and content.

To The School System:

St. Martin Parish school system has benefited in many ways other than the obvious extrinsic benefits accruing to the schools through expenditures of large amounts of monies.

The very presence of PREP has made the Parish supervisory staff aware of the value of special education programs to the regular schools. The first value usually mentioned by administrators is that special education removes problem children from normal classes thereby freeing teachers from continual discipline problems and allowing them to teach. PREP has evolved, however, from a possible "catchall" for problem children to an agency within the school system to be called upon first to help regular teachers see if they can cope with the needs of exceptional children and secondly, if they can't, to assist in the proper placement of children based on an educational evaluation and diagnosis. This innovation of services usually offered from the school board staff has met with widespread approval and use by Parish teachers and principals. The auxiliary professor is frequently called in by a teacher or principal who suspects that a child has some form of exceptionality—ranging from mental retardation to emotional disturbance, cerebral palsied, or others—for the purpose of making a preliminary observation and diagnostic screening if it seems necessary. The auxiliary professor then either makes suggestions for curricular changes and/or innovations to aid the child in a regular class, or channels a referral seeking evaluation and recommendations to one of several teams located in service agencies in the Parish and nearby city. If the child is left in his regular class, the auxiliary professor follows up on the case periodically; if referred to an agency for evaluation, the auxiliary professor sees to it that resulting recommendations are implemented. Thus, the PREP staff is used in a consultative capacity for the entire school system increasing the value of the program in terms of numbers of children reached with services, and numbers of teachers assisted.

Another PREP innovation planned for the next school year will be the construction and initiation of a small version Special Education Instructional Media Center (SEIMC). This center will be located near the PREP office complex and will be adjacent to the Parish media center with its equipment, personnel, and supplies.

The purposes and needs that the SEIMC will meet are as follows: (1) It will provide a central place where PREP materials and supplies can be housed, inventoried, and distributed. Presently materials and supplies must be sent out to teachers as they are received, frequently causing classrooms to be overstocked with items teachers are not yet ready to use. (2) A master special education teacher has been employed to spend each afternoon working in the center after parish schools are dismissed. This person will offer curriculum advice, and suggest materials to be used, to regular class teachers who have exceptional children in their classes. (3) The master teacher will prepare and demonstrate materials for PREP teachers. The close proximity of the mini-SEIMC to the parish instructional center and its multimedia equipment makes this a realistic and highly utilitarian service. (4) Having PREP teachers check out equipment and materials serves at least three basic purposes: (a) It requires them to visit the center often, thereby assuring some exposure to new materials and learning devices available; (b) It is reasonable to assume that if teachers go to the trouble of picking up equipment or materials, they will, in fact, use them in their classrooms; (c) It is more economical to order educational supplies for check-out purposes than to order identical items for every teacher of a particular class level.

It is intended that the mini-SEIMC will utilize services of the Regional SEIMC in Austin, Tex., as well as various State agencies offering materials, supplies, or suggestions.

It is possible that the center through the creative use of its resources can fulfill a great need and service both to PREP and to the entire parish school system. The magnitude of its value will largely depend on the willingness of concerned teachers and administrators to participate in the innovative process.

The physical presence of PREP had a role in getting St. Martin Parish thinking about special education as a practical, utilitarian field of education. Since PREP's inception and implementation, direct special

education services have increased as follows: (1) the number of EMR pupils served has increased by 100 percent; (2) the number of speech therapists has increased from one to five due to the large number of children being recommended for speech therapy by evaluating agencies serving PREP; (3) a program previously serving almost any high school student with an educational problem has been changed to an exemplary slow learner program (before this change in goals the range of IQ's was from 40 to 110 in the same class); and (4) the number of psychological evaluations performed in the parish has increased from none (except as administered by USL psychologists participating on a field trip) to over 75 a year, or as needed.

The influence of PREP on the future of education in St. Martin Parish is probably suggested by the frequency with which staff members are called upon to serve as consultants to groups of teachers, administrators, or parents. These requests are frequently unrelated to special education per se except as training and preparation in the field of special education have shaped the thinking and opinions of the respective staff members. Through these opportunities to "spread the word," PREP staff members are able to extol values incurred by implementing innovative educational procedures. It is hoped that by planting the seeds for change some of the creative innovations found valuable in PREP will be extended to regular classes and programs throughout the parish. An example of this is the adoption of PREP's method of curriculum writing by several parish programs that are either using or making plans to use the same system of teacher/consultant involvement in developing curriculums for their classes. Those teachers now involved in curriculum writing are enthusiastic about the training they are getting in the process.

Prior to PREP the usual dropout age of mentally retarded children was 16– the legal age for leaving school. Now, however, prospects for increasing the school's holding power have greatly improved primarily because of the construction of a prevocational/vocational building designed to meet the academic and vocational needs of older mentally retarded children. This building is the first of its kind to be directly related to a school system in Louisiana and will serve both boys and girls. The building contains a vocationally oriented shop complete with machinery, tools, and other types of vocational supplies. A decorated room has been equipped to teach older girls homemaking skills as well as sewing, cosmetology, personal grooming, and general skills required of unskilled or semiskilled workers.

Here too, as in the other PREP classes, the curriculum will be activity/experience oriented. However, the activities in which students participate will consist of educational experiences designed to prepare them with specific as well as general job skills.

This innovative class setting will undoubtedly become a major resource for other school systems considering programing for older retarded pupils. Requests to visit the vocational center are already arriving and construction of the building is not yet completed.

The innovative value of PREP to St. Martin Parish is reflected in many ways; not the least of these is its public relations value, both locally and nationwide. PREP personnel are frequently called upon to describe the various innovative characteristics of PREP to other interested educators. The auxiliary professor has participated on a curriculum writing team for a neighboring parish, helping to develop a functional guide based on that parish's needs. He has also chaired, and been a member of, curriculum committees at state and regional special education workshops. Through these kinds of exposure, information about PREP is disseminated to interested special education teachers, supervisors, and administrators.

To The Auxiliary Professor:

Because of the innovative nature of his position, the auxiliary professor has participated in a wide range of experiences. Probably the most rewarding has been the opportunity to supervise the implementation of various research-inspired concepts of teaching. These teaching theories or methods were carried out at the university level as well as in the special education classroom and ranged from the use of microteaching in teacher education (a first at USL) to the complete transformation (from an academic orientation to a functional orientation) of a special education curriculum for mentally retarded children. The basic philosophy behind all of these innovative attempts to improve education at various levels was a felt need to stress the applicability and utilitarian value of what was being taught. College courses became courses in applied methods including the actual development of curriculum with children, compared to the traditional theory-oriented concept of education courses. The special education classes in the parish were directed along a course of curriculum where the teacher asked herself how the children would use whatever it was that she wanted them to learn.

Several of the PREP classes have become testing stations for teaching methods and techniques dis-

cussed in the literature but rarely put into actual practice. A longitudinal approach to analysis of data being accumulated in these classes will eventually result in evidence for or against a variety of relatively untried but certainly innovative teaching procedures.

The experiences afforded the auxiliary professor as he participated in PREP have far outnumbered in quantity, and outweighed in quality and variety, any that he could have accumulated in so short a time with any other type of position. It can truly be said that he was able to profit from several years of experience for each calendar year in PREP.

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Changing Behavior Patterns and Attitudes Toward Learning at the Little Brown Building

This document considers the Special Services ESEA Title III Project in Clovis, N. Mex. as it functioned for the first 2 years. All of the services, projects, and programs were made available through the title III office. All were innovative in nature for this area of New Mexico, and none were offered in the general school budget at the time of allocation of title III funds.

It is the philosophy of the writer that innovations in education begin with an idea; this idea must be developed into a workable plan; and the plan should be tested in a pilot program to discover if it has merit. If the idea proves to be successful, an attempt can be made to introduce the idea to educators in a school system. The idea must be "sold" to the educators before successful implementation can be expected. Getting a workable idea into the school is of necessity a slow process, and this process can best be "sold" through an example of a successful program in operation or through observable changes in individual children in that program. Developing an idea requires creative people who have time to think and plan. Most educators are overworked to the degree that creativity, if they have such, is frequently lying dormant. Ideas are often blocked by fear of failure, by fear of criticism by conservative coworkers, or by lack of time, money, or equipment. Frequently in our school systems the educators with creative ability are promoted to administrative positions and become bogged down with matters of policy, allocation of funds, and other administrative details.

It must be further borne in mind that what is considered an innovation for one school system might have been a working procedure for many years in another school system.

The funds available under title III of the Elementary and Secondary Education Act allowed the local school system to develop and implement innovations in unexplored areas of education. And for the person with innovative ideas the availability of these funds was a dream come true. Imagine not having to go to the community to beg for financial support. Imagine being allowed the freedom to test ideas and find better ways of helping children. These available funds have released energy into creative action that formerly was used convincing the school board of needs, begging funds from the community, recruiting volunteer services, and making teaching aids to put creative ideas into action. With funds available for planning and developing ideas, this dormant creativity is allowed to grow and develop. These funds, as well, have allowed for an increase of personnel to go into the schools to assist in the implementation of innovative ideas at the "grass roots" level.

The philosophy behind the project, the Neurologically Involved Child (the child with normal mental potential who is not performing successfully in the classroom), is based upon the concept of changing be-

havior patterns and attitudes toward learning through convincing the child that he has ability and can learn. At the same time it is necessary to help the child understand those deficits that interfere with learning and to make available the necessary remediation programs. Coincident with the awareness of his disabilities, it is the intent of the project to help the child recognize his assets and utilize his sensory modalities through which learning can take place. It is further the philosophy of the project personnel that this child should receive, if at all possible, his education in a conventional school setting with the necessary help made available to him on the school premises.

The following are some of the innovative ideas that have been implemented under the Project, The Neurologically Involved Child:

- An innovative program for the child with learning disabilities
- Innovations in a physical plant and classroom equipment
- Innovative methods for developing an awareness of the existence of the neurologically involved child
- Innovations in evaluative procedures
- Innovative methods in holding conferences
- Innovations in the use of volunteer workers

BACKGROUND

Since 1956 educators, physicians, and parents in Lafayette Parish have been concerned about and working with children in the Lafayette Parish schools who were of average mental ability but were not achieving academically at their grade levels.

Services were given to many of these children by itinerant teachers of perception and reading, and in a resource room directed toward remediation of perception problems. For 2 years an experiment was conducted in which 15 children were transported for half a day to a center for multiply-involved children. The program that stressed language therapy, physical development, and the building of academic skills. With the inception of the Elementary and Secondary Education Act, title I, additional children received help through Reading Laboratories established throughout the parish.

A planning project was funded under title III of the Elementary and Secondary Education Act to plan a complete program for youngsters within the range of normal mental ability but achieving below their chronological age and grade placement and who were medically and psychologically diagnosed as being neurologically involved.

The planning committee studied research, visited programs in operation, and offered inservice training to parish teachers, parents, physicians, and psychologists and conducted two pilot classes in an elementary school.

A committee from the Lafayette Medical Association worked with the planning committee in designing a medical evaluation form, approved by the Lafayette Medical Association, to be used for all medical evaluations.

The planning committee worked with architects to plan the kind of physical environment that would facilitate the educational needs of these youngsters. Many basic ideas in the use of systems of space within the classroom were explored. Classroom furnishings to develop systems of space were designed, constructed and tried in the pilot classes. During this period, special permission was obtained to design and construct a relocatable building on the campus of an elementary school.

The theses stated in the application for the planning project were supported through the activities of the planning committee in action. The basic theses are: children should be kept in as normal a setting as possible; complete evaluations should be given; all adults in a child's life should be a functional part of the team—medical doctors, parents, regular class teachers, special teachers; youngsters should find out for themselves how best they can learn and how best they can let others know what they have learned.

It was decided that the educational programs needed for the child with learning disabilities are ungraded classes and resource programs to supply supportive help in language, perception, physical development and basic academic skills.

AN INNOVATIVE PROGRAM FOR THE CHILD WITH LEARNING DISABILITIES

The Neurologically Involved Child Program began operation in September 1968, in the relocatable building, Montgomery Annex, on the campus of S. J. Montgomery Elementary School. This elementary school is composed of kindergarten through the sixth grade with an enrollment of over 1,000 pupils and is located in the approximate center of Lafayette Parish.

In Montgomery Annex there are two self-contained classrooms, two resource rooms, an office for the director, a testing room, and a quiet room. There are

observation booths in three of the rooms.

The objective of the project is to design and test a complete school program for the child with learning disabilities associated with suspected neurological involvements in order to help the child to function successfully in society. Through this school program the child will be helped to understand his specific problems, to make full use of his abilities, to compensate for his disabilities, and to develop the inner control necessary for successful functioning in society.

The Parents

Individual interviews are held with each child's parents. A detailed case history is obtained, the program is explained, each parent signs all necessary release forms, and agrees to cooperate in the total program. Individual parent conferences and parent group meetings are a regular part of the program. Emphasis is placed on the value of home and school working together to help the child.

The Children

Each child referred for the program is administered a battery of psychological and educational tests including the Wechsler Intelligence Scale for Children, Bender-Gestalt, the Illinois Test of Psycholinguistic Abilities, Ammons and Ammons Picture Vocabulary Test, Draw-A-Person, Frostig Test of Visual Perception, achievement tests, and a medical examination.

A team, composed of a physician, a psychologist, a social worker, and educators, staffs each case to determine that child's eligibility for the program. If the child is approved for the annex program, he is assigned to an ungraded class at the annex or a regular class and scheduled to receive supportive help in the resource program at the annex.

There are 20 youngsters in the two ungraded classes. In the ungraded class the child learns basic academic skills at his level of achievement and basic concepts of the subjects in his grade level course of study. He is given special help in language development, perceptual training, and physical development. Each child is returned to a regular classroom for an activity or a subject area as soon as he is able to achieve successfully and tolerate the regular "stream-of-life." The major objective of the ungraded class is to give the child the necessary help and to return him to a regular class full time.

Fifty children in regular classes, who have less severe problems, come to the annex for group or individual therapy at scheduled periods daily. These supportive services include perceptual training, physical development, and academic skill development.

The Teachers

The personnel at the annex consists of a director, two educational specialists, one resource room teacher, one language perception specialist, one physical development specialist, a part-time psychometrist, and a secretary. A psychologist and medical consultants serve on a part-time basis.

The success of this program depends upon the understanding and active cooperation of the school's administrative staff, the teachers, and the nonteaching personnel on the campus.

Orientation meetings are held for regular class teachers. In addition, the educational specialists from the annex work with each regular class teacher in discussing the kinds of problems a specific child has, in suggesting curriculum adjustments, in recommending methods of testing, in soliciting her acceptance of quality rather than quantity work, in grading at the level of achievement, and in meeting other academic and behavioral problems as they arise.

The Resource Program

The resource program is for the child who is assigned to a regular class and comes to the annex daily for supportive help. Approximately 50 children are included in this program. Each child receives help in his deficit academic skill area and/or language and perceptual therapy and/or physical development.

The scheduling of a time for each grade level to come to the resource rooms is worked out by the director and the administrative staff of the elementary school. Each teacher is notified of the time to send the children from her class to the annex. The educational specialists and the project director examine the results of the tests and group the children from each grade level according to needs for specialized training in language and perception, physical development and academic skills. The children are assigned a time for the different therapies while at the annex. The resource program provides a real opportunity for the project personnel to encourage regular class teachers to use innovative methods and materials in the regular classes.

The initial task of the educational specialists in the resource program is to help a child change his behavior and attitude toward the learning situation. This is done by providing a "series of successes," convincing the child that he is a capable and worthwhile per-

son, helping him discover what his assets are and how he can utilize them in learning, and helping him discover what his deficits are and how he can remediate them.

The resource room teacher attempts to locate and remediate specific academic deficits through an analysis of the results of the child's achievement test and his classroom performance. These deficits may be the result of a child's failing to grasp a concept or master a skill and have been worsened by confusion, misunderstanding, and frustration. The resource room teacher works in all areas of the course of study—language arts, mathematics, science, and social studies—teaching basic concepts of subjects that relate to the activities at the grade level and on the remediation of specific skills.

The language perception specialist analyzes the results of the Illinois Test of Psycholinguistic Abilities and the Frostig Test of Visual Perception to discover each child's intact sensory channels and the deficient channels. In the program of training the specialist works through the intact areas to develop the deficient areas. Such materials as the Peabody Language Development Kit, the Frostig Materials, teacher-developed language and perceptual materials that correlate with units of study in the regular or special classes and puzzles, games, and crafts are used. An attempt is made to bridge the gap in the deficit language and perceptual areas by the teaching of basic vocabulary, percepts and concepts of a subject being studied in the class.

The physical development specialist stresses the development of body image and basic physical skills. At the beginning of the session she administers a test of motor abilities that she has developed, based upon ideas from Kephart, Bowers, and a test developed by the Montgomery County, Md., public schools. From this initial screening the therapist is able to detect strengths and weaknesses. She plans a program of daily activities for each child to develop deficit areas by working through intact areas. Physical development is also a period to which the child can look forward for the release of pent-up physical energy. Stress is placed upon those basic skills required for games and the rules of games to aid the child in becoming a more acceptable part of his peer group. The physical development specialist serves as a consultant to the entire school and is on the playground at recess, beginning activities and encouraging participation.

The Special Classes

There are two ungraded classes for children in grades one through six. After a child is approved for an ungraded class, his battery of tests is analyzed by the educational specialist. A feature of the analysis is the attention given to the various subtests for planning a program of diagnostic teaching. A program for the development of academic skills is planned for each child at his achievement level. Concurrent with the use of a child's intact modalities for learning, remediation in his deficit areas is stressed. He is taught basic skills individually or in a small group. Concrete materials are used; the child is given the opportunity to verbalize an activity as he participates in it. Much use is made of all forms of audiovisual media such as films, filmstrips, filmloops, tapes, opaque or overhead projection of materials, language master, programed materials, and teacher-developed materials to teach a fact or skill and to aid in the transfer of learned material to a different context.

In the knowledge or context areas of learning, it is assumed that the child with normal mental ability can understand the concepts to be learned even if he cannot read the material or perform adequately on a written test. Consequently the material is presented through films, by teacher reading or the child listening to a tape, by making and studying models, and through real life experiences. An attempt is made to bridge the gap in the deficit areas by the teaching of basic words and concepts of a subject and by field trips where the child can see and examine the specific subject being taught. The child is tested through written tests that he is able to read, oral tests, oral reports, and class discussions.

Much use is made of craft media for learning and as a method of redirecting physical hyperactivity. Modeling clay, for example, is used to allow body movement—through just rolling clay in a hand during a listening activity. At a higher level, this same medium is used to illustrate items concerned with the subject being studied.

Each child in the special classes has a period of language and perceptual training and a period of physical development every day. These two daily periods are taught by the specialists from the resource program. As a byproduct of this specialized training given the child, the educational specialist is released from all responsibility for her class for 1 hour a day, thus giving her time for planning, evaluating, holding conferences with teachers and/or parents, or just plain "resting and recuperating." It is much easier for the teacher to view the situation analytically and in an uninvolved manner when she is physically removed from the situation for a portion of a day.

When the special class teacher feels a child is ready

to return to a regular class for a portion of a day, the building principal is contacted by the project director and a request for regular class placement is made. The principal makes the necessary arrangements with the class teacher. The educational specialist and the teacher make educational plans for the child. When the class teacher thinks that the child is capable of remaining in the regular class for an additional length of time, she makes the recommendation. The gradual placement of a child in a regular class has done a great deal toward furthering understanding and acceptance of the child with learning disabilities by the regular class teacher.

The Psychologist-Consultant

The psychologist-consultant is used in an innovative manner. He spends 3 hours each week in the special classrooms and the resource rooms observing behavior, interpreting behavior to the educational specialists, and counseling with some children. He makes himself available during the coffee break so that he might have a quick consultation with the regular class teacher or schedule an appointment for a later time. It is the opinion of the educational specialists that the services of the psychologist-consultant are a great help in handling problem behavior. It has also become quite "socially acceptable" for a child to request to talk with the psychologist.

INNOVATIONS IN A PHYSICAL PLANT AND CLASSROOM EQUIPMENT

It is our belief that the physical setting is of major importance and should be "different from the room in which the child has met failure" and that this physical plant should be so adaptable that, as the child becomes more able to tolerate stimuli, changes in the physical environment can be made. Therefore, the physical plant and classroom equipment were designed and constructed with these thoughts in mind. This building and equipment have a minimum of distracting features. They are versatile enough to meet the child's varying sensory deficits and they are portable enough to be rearranged in preparing for a child's entrance back into a normal classroom.

The Physical Plant

The design of the Montgomery Annex is unlike the normal concept of a school but more like residential construction. The complex consists of four units joined together with a demountable central core to form a pinwheel type of structure. The classrooms are joined to the center unit with a floor and roof, two outside entrances, and two glass walls to form a complete building with entrances to four classrooms, administrative area, testing room, quiet room and hallway. The outer units are bolted to the center section, thus providing a method of separating and rejoining required to satisfy the relocatable provision of the design. Other features include heating and cooling systems, dual lighting system (incandescent and fluorescent) toilet rooms, observation rooms, and storage closets. The windows have adjustable outside louvers that can be opened or closed to control auditory and visual stimuli from outside the classrooms. The building complex is attached to the adjoining school by a covered walk.

Classroom Equipment

Another area of innovation in this project was the designing and constructing of portable classroom furnishings to be used in developing systems of space within a classroom. The main feature of this equipment is portability and movability. This equipment was tested in the pilot classes located in a conventional classroom and in the operational program in the experimental building.

The room dividers make possible the division of space for specific activities and allow for accessible storage of equipment and supplies used by the teacher and children during the learning activity that will take place in this system of space. Portable carrels that can be folded when not in use were constructed on the back of some room dividers. Other types of portable carrels were designed, constructed, and tested.

One quarter-circle table and three rectangular tables with removable dividers were designed and constructed to be used for group learning activities so that each child can see the teacher, material projected on a screen, or a blackboard but not the child next to him. Storage compartments for the removable dividers were built into the room dividers.

Individual table desks were designed and constructed to assist the child in learning to work in a small group. Electronically equipped listening centers were also constructed.

The carrel-type desks are used for certain activities to help the child who is distracted by visual stimuli. When he has learned to tune out stimuli, he returns to a conventional type desk.

INNOVATIVE METHODS USED IN DEVELOPING AN AWARENESS OF THE EXISTENCE OF THE NEUROLOGICALLY INVOLVED CHILD

People–lay, and professional–must become aware that a problem exists before they can do anything about working out a solution. The groups who should develop an awareness of the educational problems of the child with learning disabilities are parents, teachers, school administrators, medical doctors, psychologists and–most of all–the child himself.

Medical Doctors

An explanation of the planning project was given to the Lafayette Medical Association and its cooperation was requested. A specific request was made that a committee be appointed to work with the project personnel. The association appointed a committee to represent the association in planning and implementing plans dealing with the Neurologically Involved Child Project. This committee met with the project personnel for discussions and assisted in the planning.

Nationally known consultants were brought in to meet with members of the medical association. These meetings were well attended and the interest shown by the physicians was most gratifying to the project staff.

The association prepared a form–medical evaluation–to be used by any physician in assessing children referred as candidates for this program. The association also prepared a cover letter explaining the project and what is requested of the physician. The use of this cover letter and medical evaluation form did a great deal to develop an awareness of the problem within the medical profession. A member of the medical committee assists in the staffing of children referred for the program.

Psychologists and Social Workers

Nationally known consultants were brought in to meet with local psychologists and social workers. At these conferences stress was placed on the importance of analyzing subtest scores and translating results of all evaluations into terms that would be meaningful to parents and educators. These professionals and the agencies they represent have cooperated with the program by sharing evaluations, referring children and counseling parents.

School Administrators and Teachers

Talks explaining the project and the educational problems of the child with learning disabilities were given to the school board central office staff, principals association, and faculty groups. Brochures and reprints of articles were circulated. Visitations of the program in operation were encouraged.

Parents

Parents heard about the project. They contacted the project personnel and asked for help or were referred by physicians, psychologists, or school personnel. After having conferences (telephone and face-to-face), reading the literature that was given to them, and trying out some techniques of handling the child which gave positive results, a parent realized that his child was not "bad" but had some very real problems that interfered with learning. The parents became actively involved in the project through such activities as: parent group meetings, observation of the children in the program, individual conferences with the regular class teacher and the educational specialist, and substituting for regular class teachers so that the teachers could attend study group meetings and participate in conferences with other parents.

The Community

Newspaper, radio and television publicity, and talks given to civic clubs helped to make the community aware of the child with a learning disability and aware of the need for school programs to meet his needs. Many children were brought to the attention of the project personnel by a neighbor or a friend of the children. Civic groups assisted through volunteer services and the donation of equipment. Community representatives became aware of the problems by working in the program, by visitation at the program, and by getting to know the children and their teachers.

It is the feeling of the writer that as a result of the things reported above, the community became aware of the educational problems of the child with learning disabilities.

INNOVATIONS IN EVALUATIVE PROCEDURES

Based upon the study of exemplary programs, personal beliefs and experience, project personnel decided that the following procedures would be followed before a

child was accepted in the program: parental consent, completion of developmental and personal data form, psychological and educational evaluations, medical examination, and staffing to determine eligibility for the program.

An innovative method was developed for the initial intake conference, innovative techniques were used for the sharing of test results during staffing, and a form was developed for a sharing of the recommendations for educational plans. The necessary forms and charts to tabulate data were developed, tested, and revised.

The innovation of staffing by representatives from different disciplines—sitting together discussing and planning for a child—has indeed been of great value to the staff personnel. At the initial staffings it was discovered that representatives from these disciplines had difficulty in communicating. But after acceptance of the lack of knowledge and understanding of the technology of the other disciplines, and improving on the ability to communicate, the staffing process has proved a learning experience for all involved.

Following the staffing, the parent or referring agency is notified of the recommendations. A report is sent to the child's classroom teacher informing her of the child's areas of strength and weakness, making suggestions for utilization of these strengths and making recommendations for techniques to be used in the regular class for remediation of deficit areas.

Through the use of innovative measures and exemplary methods, the project staff has improved in its ability to translate the evaluation findings into classroom procedures and to share this knowledge with the most important person, the child's classroom teacher.

INNOVATIVE METHODS OF HOLDING CONFERENCES

Different types of educational conferences have been used effectively. These conferences have varied from the very formal, information giving type, to the informal type, utilizing more interrelationships of the conferees. The broad objectives of all these conferences were to develop an awareness of the problems of the child with learning disabilities and to find ways to meet his needs by sharing knowledge about the problem.

The Formal Conference Using Nationally Known Consultants

An all-day symposium, cosponsored by the Lafayette Medical Association and the Lafayette Parish Schools, was held. The guest speakers included noted psychiatrists, neurologists, and educators from many sections of the United States. Those invited to attend included parents, medical doctors, psychologists, social workers, and educators representing public and private schools and universities throughout the State. The topics discussed ranged from medical diagnosis and treatment through educational programs.

The Semiformal Conference Using Nationally Known Consultants

A series of conferences utilizing two nationally known consultants, a psychologist, and a pediatrician, was held. These specialists met with a group of medical doctors, a group composed of psychologists, social workers, and nurses from the community agencies, schools, and the local university; and a group composed of members of the administrative staff of the schools, members of the special education departments of the schools, and the local university. The objective of this series of conferences was to share with professionals what is known and what can be done to help the child with learning disabilities. All of these meetings were composed of an informal presentation and discussion.

Nationally known educators met with a representative from every school in the parish (county) and discussed methods, materials, and techniques being used in working with the child with learning disabilities in a school setting. At each of these meetings a presentation was made and a discussion followed each presentation. The representative from each school was expected to share what she learned with her coworkers.

The Semiformal Conferences Involving Local Educators

The project personnel and regular special education personnel presented talks and led discussions concerning the education of the child with learning disabilities to such groups as the supervisory staff, the principals association, school faculty groups, and civic club groups. These presentations included such topics as: defining the characteristics of the child with learning disabilities, using test findings in curriculum planning, values of language and perceptual training in special programs and in regular classes, and curriculum adjustments and modifications.

The project personnel met with groups of parents of children included in the annex program. At these meetings the project personnel attempted to inform

and share with the parents group such subjects as knowledge about the child with learning disabilities, the Neurologically Involved Child Project, and home management.

Parent-Teacher Conferences

Individual conferences were held regularly with the parents of children in the Annex program. These conferences were more intimate and dealt with the specific problems of an individual child. The conferees included the child's parents, his regular class teacher and the educational therapist. During this conference the child's specific assets and deficits were explained to the parent and educational and home plans were formulated.

The Informal Conference Using Visiting Consultants

An informal conference, a 2-day dialogue for Directors of title III projects dealing with the child with learning disabilities, was held. Ten project directors from various sections of the United States attended. Each participant was asked to bring only his presence, his intellect and a willingness to share those concerns, opinions and hopes that need to be expressed openly. No program was planned. There were no prepared talks. The general plan of the meeting was a free sharing of ideas dealing with the child with learning disabilities. The responsibility for maintaining the dialogue rested with each participant. The participants were a group of innovators who had unique and exciting ideas. The opinion was expressed by all of the participants that this dialogue was a most valuable educational experience and a wonderful method of disseminating information.

INNOVATIONS IN THE USE OF VOLUNTEER WORKERS

Volunteer workers are being used in many diverse ways in this project.

Parent-Volunteers

The parents of children included in the annex program substitute in regular classrooms so that the class teacher can participate in individual parent-teacher conferences. These parents also substitute for playground duty so that all teachers can attend those faculty-study meetings that deal with the education of the learning disabled child.

Individual parents volunteered such diverse services as playing the piano for music activities, teaching French, summarizing textbooks, transcribing tapes, preparing teaching materials, sharing technical education and knowledge with the children, furnishing homes for socials, chaperoning field trips, and preparing refreshments and serving as hosts at conferences.

Community Volunteers

Community organizations supplied volunteers to work in the project, purchased equipment, and served as hostesses for conferences.

Volunteers from the Service League of Lafayette assisted the physical development specialist in working with children in the physical development program during the first year of operation.

Five volunteers from the Lafayette Service League are conducting a tutorial reading program during the second year of operation. Each volunteer works 1 hour each week with five children in two 30-minute sessions. Each was given two training sessions, and a method for reporting each day's session was worked out. A programed reading series is used.

Another community organization, Beta Eta Chapter of Beta Sigma Phi, purchased some audio and visual equipment for the project.

The Lafayette Chapter of the National Society for Crippled Children and Adults served as hostesses for the symposium. One school board member entertained all dialogue participants at the barbeque in his home.

SUMMARY

In the Neurologically Involved Child Project many innovations have been tried. Some have been entirely successful; others still need refining.

One of the greatest assets to the project has been the support given by the members of the supervisory staff and the building principal. The supervisors have approved and encouraged more purposeful grouping of children within regular classrooms, the assigning of work on the basis of the child's ability to do quality work, grading of the child's work on quality rather than quantity, and grading the child's work on the basis of his level of achievement. The school principal has enthusiastically accepted the annex as a part of the school and has cooperated in every phase of the program. Total success has not been achieved in

getting all teachers to make adjustments, but inroads have been made.

The cooperation and support of the parents of children included in the program have been most outstanding. As the parent discovers why his child is having trouble in school, meets other parents whose children have similar problems and finds ways of helping his child, much tension and frustration in the home are relieved; and there is a better acceptance of the child and his problems.

The parents of the children in the resource program perceived a significant change in the child's behavior, as measured by a pre-post questionnaire, in those items that related to hyperactivity, concentration, attention and cooperation.

The children in the program have made progress, both academically and socially, as seen in the results of pre-post testing, and, as observed by the attitude, behavior and performance of individual children who are in the program, and those who have returned, both part or full time, to the regular classes and are functioning with little or no supportive help. A total of five children have been terminated from the ungraded classes and nine from the resource program.

Statistically significant improvement occurred for both groups, the ungraded classes and the resource program, on the Verbal and Performance sections of the Wechsler Intelligence Scale for Children. On the subtest breakdown for the ungraded classes, the improvement on four of the verbal subtests (information, comprehension, similarities, and vocabulary) was statistically significant. In two of the verbal subtests, (arithmetic and digit span) improvement was not statistically significant. The improvement in three of the performance subtests (picture arrangement, block design, and object assembly) was statistically significant. The improvement in two of the performance subtests (picture completion and coding) was not significant. Statistically significant improvement occurred on all six verbal and on three performance subtests (block design, object assembly, and coding) for the resource group. This group did not show significant improvement on two performance subtests (picture completion and picture arrangement).

The comparison of the pre- and posttest data on the Illinois Test of Psycholinguistic Abilities for the ungraded classes showed statistically significant improvement on all subtests except auditory decoding and visual motor association. The resource group showed statistically significant improvement on all subtests except visual motor association.

The cooperation of physicians, psychologists, and community agencies has been a great asset to the success of the project. The project personnel are in contact with the physician or agency concerning problems pertinent to the child. Some of the most dramatic changes have occurred with the child who is in a therapy group at the local child guidance center and in the annex program.

The special education department is an integral part of this program. The supervisor and coordinator serve as advisors and assist the project in many ways. The itinerant teachers make referrals of children, administer tests, and talk with class teachers and parents. The social worker spends 1 day a month meeting parents to obtain personal data on a child referred for the annex program. One itinerant teacher works with a group of children approved for the Neurologically Involved Child Project and assigned to a different elementary school. This group serves as a control group for the statistical evaluation. Another resource room teacher in a different school works with children approved for this project. This group also serves as a control group. Other itinerant teachers give supportive help to children who have been terminated from the annex program and work with their teachers.

The attitude of the regular class teacher in the elementary school changed from anxiety over interference with her daily schedule and over the threat that she was not a capable teacher to the feeling of gratitude in finding some ways in which these children can and do learn. As a teacher begins to understand one child and sees a change in his behavior, attitudes, and performances, she seems to have a better understanding of the problems of the child with learning disabilities. It is the opinion of the writer at the close of the first year of operation that the project is no longer a threat to the classroom teacher. To the contrary, she sees the program as a source of help not only for the child who has learning disabilities but for all children. She sees, as well, this annex as a source of help for teachers. One concrete proof of this is that teachers in this school made 44 referrals of children who might be eligible for this program during the second year of operation. The classroom teacher now understands that the child with a learning disability is her responsibility and that placement of a child in the program does not mean that he will be in a special class but it means that he will be in a program of remediation in which she is the "star performer."

It is the opinion of the writer that the project is successful in helping individual children overcome or compensate for learning disabilities, in developing within the community an awareness of the educational problems of the child with a learning disability and in helping the regular class teacher, the child's parents

and his doctor to have a better understanding of his educational problems and to learn some positive measures that can be used in helping the child.

To see a child's facial expression change from sullen and unhappy to a beaming happy countenance tells us that something good is happening; to look up as the door of the annex bursts open and a child rushes in with a paper crushed in his hand—the grade on the paper is a "C," but it used to be an "F"; to hear a child say, "I'm not afraid to read anymore, because I found out that I can read at the annex—and it is fun"; to remember that this boy said once "The only thing I am good at in school is lunch"—and one day he spelled six words correctly on a spelling test;—these things and many more cannot be measured statistically, but the changes are obvious to the people who work and live with the child. The true success of the program cannot be adequately measured until each child fulfills his role in adult society.

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